

# MOTOR AGE

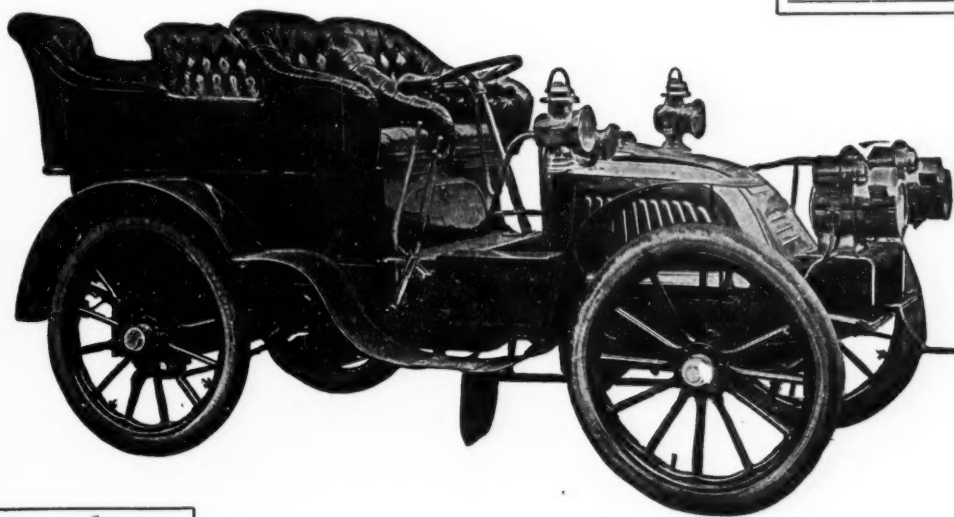
Vol. 3 No. 26

JUNE 25, 1903

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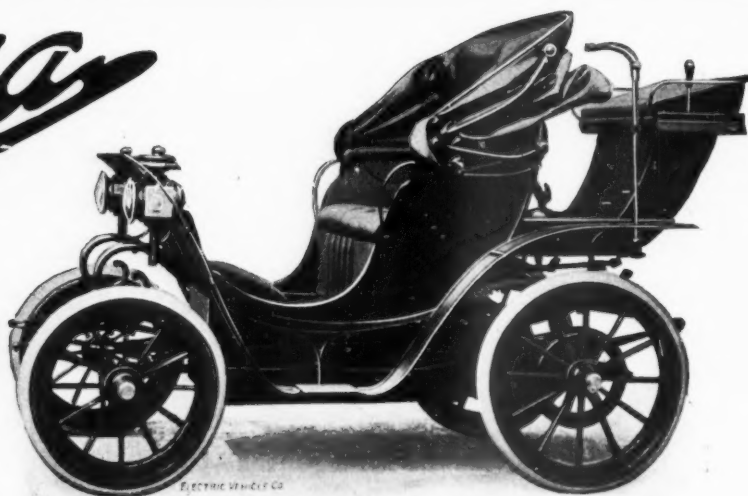
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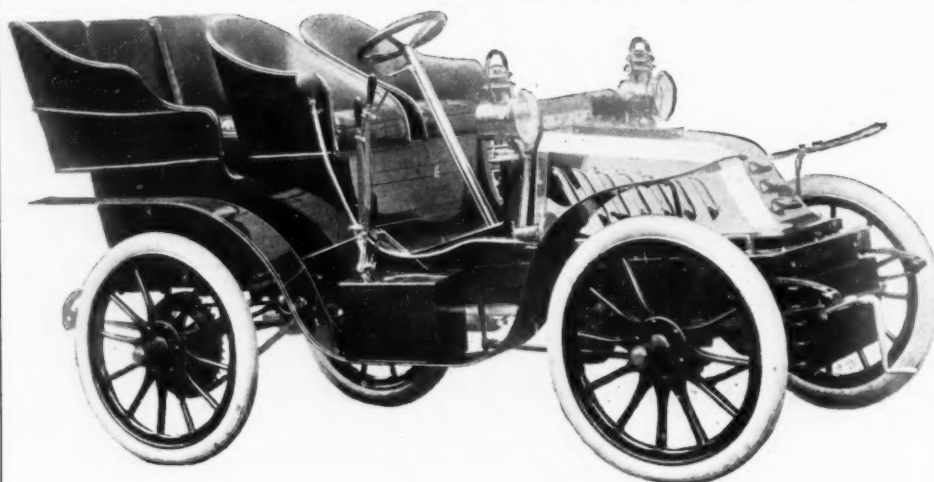
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# MOTOR AGE

VOL. III. NO. 26.

JUNE 25, 1903.

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## THE AMERICAN INTERNATIONAL CUP RACE TEAM

WHILE two of the three men who will a week from today—July 2—battle for America in the international cup race—the Derby of automobilism—were chosen in competitive trials, their selection was almost necessary and at the same time popular. Both were known to be good and clever sportsmen, good drivers and the drivers of good cars. The third member of the team, the one first chosen without trial on account of the early date at which he volunteered to serve, represents a known quantity in automobile racing. America has no cause to feel ashamed of her team, even though it does not succeed in bringing the Gordon Bennett cup to American soil and possession. Winton, who made the Winton and much of its reputation; Mooers, who made the Peerless and much of its reputation, and Owen, who made the Winton's reputation in the New York market—these compose the American team. Each is a prominent figure in American automobile racing.

Alexander Winton began the manufacture of automobiles before he left off the manufacture of bicycles. He experimented early and late and finally succeeded in producing a machine which he drove from Cleveland to New York at a 15-mile an hour rate. Here Alexander Winton stepped into prominence as an automobilist.

Then he went back to the shop and began the production of the commercial Winton, sticking to this work until, as the only American ready and willing to compete for the Gordon Bennett cup, he appeared as a racing automobilist, sailed for France and tried to win the international event. America's first

chance to get the cup, was, however, unfortunately spoiled by the collapse of a too light wire wheel.

Winton's next notable performance was the attempt to drive from San Francisco to New York. This, too, was unsuccessful, on account of the selection of a route which ended in sand too deep to cross. Then Winton appeared as a track racer. His success is well known. First on a long, low wire wheeled racer he

low, flat body with sloping ends, the "pup" is perpetuated in the two new Bullets which are now in Ireland ready to compete for the cup, for while a four-cylinder motor propels Owen's Winton and an eight-cylinder motor drives Winton's car, the same style of body construction has been followed and both cars look much like a larger growth of the little "pup" which skirmished so well for victory in the light class at track meetings last year.

Winton's most recent racing performances in this country were his record trials on the Daytona-Ormond beach in Florida late last winter, when, with the old Bullet, he placed the 10-mile world's record at 10:26 and made several remarkable, although not record breaking, rides over the hard sand course. He is not just now the holder of many records on account of not having appeared recently on the track; so that since his rides of last summer Barney Oldfield, with the big Ford-Cooper racing car, has succeeded in taking from him the 1 and 5-mile track records.

Louis P. Mooers has not been known to automobilism as long as Winton, but he has been considerably known while he has been known. Like Winton, however, his most remarkable track races were during last season, when he ap-

peared at the various meets with a little 16-horsepower car that was dubbed the "Yellow Kid" on account of its blonde complexion. It was small and light, but made a good showing in its class.

Late in the summer Mooers built a four-cylinder racing car, but by the time this was in good shape for racing the meets of the summer were over and he was given no chance to



ALEXANDER WINTON

won several prominent events and established the American track record for 1 mile. Then with the first Bullet he appeared in 1902 and won more races and broke more records, placing the mile at 1:02½ at Cleveland in September of that year. The successes of the Bullet were rivaled by those of the "pup," a light racing Winton, built to try-out the motor for the 1903 touring car. Distinguished by its



drive it in competition. During the winter, however, road trials proved it to be a speedy car—in fact, it was used in some of the trials on the occasion of the eliminating fiasco by which the Automobile Club of America picked two men from the only two competitors that showed to try for the honor of representing America in the cup race.

Basing his construction upon the lines which had proved successful in the little yellow racer and in the 40-horsepower model, Mooers spent the latter part of the winter in the construction of the 80-horsepower Gordon Bennett car which has been illustrated several times in *MOTOR AGE*. Mr. Mooers is a genuine sportsman—able, determined, daring and clever. He

will ride to win, whether he wins or not. Mooers was last of the team to sail.

Percy Owen, manager of the New York branch of the Winton Motor Carriage Co., is fortunate in being blessed with a broad popularity in both trade and automobiling circles. An old member of the Automobile Club of America, treasurer of the National Association of Automobile Manufacturers and virtually founder of the New York dealers' association, he is conspicuous in Metropolitan affairs of an automobile nature and his conspicuousness is without the taint of unpleasantness.

His racing career has always been associated with the Winton. He was a competitor in the first automobile track race meet in this coun-

try of any importance. This was at the Guttenburg track, where the early racing men of the Manhattan district gathered to try their metal. Here Owen raced against A. C. Bostwick. In 1901 he established various track records for middle weight cars. In 1902 he did considerable racing in the east with a stripped Winton touring car and later in the summer appeared as driver of the "pup," with which he broke several medium weight class records that stood until Harry Harkness with a Mercedes that came into the class broke them. In endurance runs, and similar affairs of a less strenuous nature, Owen, like Winton and Mooers, has been one of the important figures.

## TIMING AND SCORING OF THE GORDON BENNETT RACE

The timing of the cars in the race will be in charge of Robert E. Phillips, who will depart from the usual method which has heretofore been used. In races similar to this it has been the practice to time the arrival at and departure of each car from the control, and arrive at the allowance to be made from the gross running time by a process of deduction. The factors to be used by Mr. Phillips in determining the ultimate winner will be, first, the sum total of the periods of time occupied in traversing the various controls, and second, the periods of time which elapse between the finish of the first and subsequent cars. The actual time occupied in completing the course may be regarded as a negligible quantity so far as ascertaining the actual winner is concerned.

The time of each car in a control will be checked and recorded on an independent watch, so that the timing of each car through a control will be separate and independent observation. As there are seven controls, and twelve watches at each control, it will require eighty-four watches. These will be furnished gratuitously to the club by Messrs. Stauffer, Son & Co., of London.

At each control there will be twelve watches and twelve small boxes to contain them. The timekeeper at the entrance of the control will start one of the watches immediately a car arrives at the control and comes to a state of rest in the space allowed. He will then hand it to the head marshal of the control, who will satisfy himself that the watch is started, and will then show it to the driver of the car and warn him of the time allowed for passing through the control. The head marshal will indorse

a duplicate card with the number of the car, and place both the card and the watch in one of the boxes, and having locked it, will hand it to the cyclist allotted to pilot the car through the control. On reaching the end of the control the cyclist will hand the box to the starter, who will unlock it and show the watch to the driver, telling him how much time remains until he may depart. The starter will indorse the duplicate card with the period of time allowed for the control, will place one part of the card in the box on the car provided to receive such cards, and at the expiration of the allotted time, give the driver the signal to depart, and at the same time stop the watch.

The starter will then place the watch and the other half of the duplicate card in the box, lock it and return it by the cyclist to the timekeeper at the entrance of the control. The timekeeper will examine the watch and make

a record of the time occupied in the control as shown by the minute recorder. The hands of the watch will then be set back to zero, ready to be used for another car.

Should the starter for official reasons be unable to get a car started out of his control at the termination of the allowed period, he will allow such additional time as may be necessary in periods of not less than 1 minute, and will indorse the two parts of the duplicate card with the actual time occupied in the control. At the entrance and exit of each control there will be a large dial clock, so that the drivers can ascertain approximately the time of their arrival and departure.

The start and finish of the race will be timed by two independent systems. The first will be by three or more official timekeepers of the club, assisted by one or more official timekeepers of other competing clubs, and second by an electrical timing apparatus, which will be employed to time the arrival of the cars at the finishing point.

The staff at the controls of the Gordon Bennett race will consist of 161 officials. These will be seven marshals, six starters, twenty-one timekeepers, fourteen registrars, seven press stewards, twenty-one control stewards and 105 cyclists. The distinguishing colors of these officials will be as follows: Marshals, green; starters, white; timekeepers, red; registrars, blue; press stewards, yellow; control stewards, green stripe; cyclists, green stripe; cyclists, green arm band and gold badge.

The head steward will be in charge of a control and will be responsible for the efficient organization of his staff. At the outward end of the control will be a starter whose duty will be to start the cars and



MOTOR AGE

PERCY OWEN



stop the watches. The three timekeepers will be stationed at the inward end of the control. Their duties will be to start the watches upon the arrival of the cars at the control. They will be assisted by two registrars, who will book the time and act as lap scorers. The press steward will gather information and answer all inquiries on behalf of the press. He will render all assistance possible to newspaper correspondents and prevent the attention of the other officials being diverted from their work by requests for information. The control stewards will assist the marshal in maintaining and carrying out the organization of the control. Each car will be piloted through a control by a cyclist who will carry the watch recording the time of the car in the control.

A map of the course has been prepared especially for the drivers, showing the road in sections varying from  $4\frac{1}{2}$  to 13 miles. The sections are marked with vari-colored flags, and their meaning explained. A small triangular green flag will signify that it is necessary to drive cautiously for a quarter of a mile, and should it be necessary to continue such cautious driving for another quarter of a mile another small triangular flag will be displayed to indicate this at each subsequent quarter.

Large green flags will be stretched entirely across the road to indicate that a corner has to be negotiated within 300 yards. A large flag, half green and half red, stretched across the road will warn the driver to stop in 300 yards, at which point a large red flag will be stretched across the road. The maps will supply the necessary details in English, French and German, and stewards who speak all three languages will be placed within the controls.

Every possible precaution has been taken by the Automobile Club of Great Britain and Ireland to secure the safety of the public and the participants and officials connected with the race. The roads have been thoroughly repaired throughout, bends have been straightened and the right-angled turns rounded off. The hedges will be cut 200 yards on the approach side of each corner. Caution and danger flags will be fixed where necessary, and the road stewards will be supplied with flags with which to warn approaching cars of any obstruction on the road.

On the morning of the race the road will be closed to traffic after 6 a. m. Every road running into the main road of the course will be blocked, and two police officers will be stationed at these points. All animals will be securely penned in the fields, and spectators will not be allowed either on the road or on



LOUIS P. MOOERS

the roadside of the hedges. Over 2,000 of the Royal Irish Constabulary will be on duty to enforce order, and in addition to these, a company of militia will protect the Curragh and Maryborough Heath.

Two pilot cars will start at 6:30 a. m. to make the entire circuit of the course, one going east and the other west. The public will be warned in this way that the race has begun and no one will be allowed to move on the road until it has been officially announced that the race is over. All persons living within 300 yards of each side of the road will be personally notified, and in addition, public notices will be posted on every convenient site, setting out in detail the names of the roads closed and giving a general warning to the public to remain behind the hedges and to obey strictly the police and club officials.

For the protection of the competitors the cars will start at intervals of 7 minutes. This will give an opportunity for the dust to settle between cars. There will be seven controls. The first will be at Castledermot,  $17\frac{1}{2}$  miles from the starting point; the second at Carlow,  $6\frac{1}{2}$  miles farther on; the third at Athy, 12 miles from Carlow. At these controls the cars will be detained from 6 to 12 minutes in the first time round in order to avoid the possibility of the first car passing the original point of departure before the last car has started. The other controls are at Kildare, Monastervan and Stradbally.

#### GABRIEL DISPLACES FOURNIER

Fernand Gabriel has been substituted for Henry Fournier on the French team in the international cup race. This is a surprise and a matter of regret to Mr. Fournier's admirers in this country, where he formerly re-

sided and enjoys much popularity. Rumors of feeling of personal and trade jealousy and enmity against Fournier have reached this country from time to time. There have been indications of the cropping out of an anti-professional and a would-be aristocratic restriction in the cup race team selection in France as in Germany. This, however, is a mere pretext. The other members of the team have been professional cycle riders like Fournier, as in fact all the leading racing men of France and England have been.

It is probable that in the substitution of Gabriel for Fournier the Mors company was simply desirous of providing its car with the best driver, and while Fournier may be no less great than he has been, it is certain that Gabriel is a magnificent race driv-

er. His feat of pushing his way past 118 cars in the 343 miles of the Paris-Madrid race alone demands for him a place in the vanguard of racing automobilists. It is said that, aside from newspaper comment, there is no ill-feeling over the matter.

With Foxhall P. Keene on the German team the Automobile Club of America will have four of its members competing in the international cup race. Among the members expected to be present at the race are: President Shattuck, W. K. Vanderbilt, jr., Col. John Jacob Astor, Clarence Gray Dinsmore, J. Howard Johnson, John A. Kingman, John A. Hill, David Wolfe Bishop, Harry S. Harkness, Charles J. Glidden, H. M. Baruch, Isaac L. Rice.

#### DE CRAWHEZ WINS ARDENNES CIRCUIT

Brussels, Belgium, June 22—[Special Cable]—Baron de Crawhez won the Ardennes circuit automobile race today, his time being 5:52:07 $\frac{3}{4}$ . This lowered last year's record 1 minute. M. Girardot was second in 6:24:29 $\frac{1}{2}$ . M. La Banond was third. Baron de Crawhez rode at the rate of 54.4 miles an hour.

W. K. Vanderbilt, Jr., retired early in the second round because of mechanical troubles. Charles Jarrott had trouble with a tire and left the race.

Jarrott won the race last year with a 70-horsepower Panhard in 5:53:39. The short circuit of 100 kilometers was won last year by Baron de Crawhez with a 70-horsepower Panhard in 1:02:25. De Crawhez was sixth in the Bordeaux section of the interdicted Paris-Madrid race this year. Vanderbilt finished third last year in the Ardennes circuit, his time being 6:22:11 $\frac{3}{4}$ . The distance was 320 miles.

# MOTOR AGE

Published Every Thursday by THE TRADE PRESS CO.  
**AT 1303 MICHIGAN AVENUE, CHICAGO.**  
 Telephone Calumet 7011  
 Eastern Office, 150 Nassau Street, New York.  
 London Office, American Publication Bureau,  
 58 Manor Park Road, Harlesden, N. W.



Entered at the Chicago Post Office as Second Class Mail Matter.

Subscription . . . . . Two Dollars per Year

Any news dealer may obtain MOTOR AGE through the Western News Co., Chicago, or any of its branches, on a returnable basis

## DESIRABILITY OF STEEL ROADS

General Roy Stone, old timer in the fight for good roads and inventor and chief boomer of the steel road, is planning a mammoth automobile highway across Long Island.

He declares that for \$15,000 a mile a great toll road 100 miles in length can be built, which, by serving the triple purpose of commercial, pleasure and racing route, will more than pay a creditable interest upon the invested capital.

And therein lies the secret of the desirability of the steel road. Fifteen thousand dollars a mile is expensive even for a wide, double-track road, but it represents substantially the entire cost.

The maintenance of the road practically ends at the care of the fences, crossings, toll gates, etc. The road itself cannot wear out, is subject to little that can make toward repairs. When laid it is permanent. To light runabouts and heavy freight vans its surface is alike impervious.

With the motor age in sight the steel road is without question the ideal highway.

With no horse hoofs for which to provide either to secure pulling ability or comfort for the horses themselves, the cushion surface of all other roads becomes unnecessary, and with it may be relegated the unpleasant features of roughness, mud, dust, filth.

Hard, smooth, even, dustless, without glare, the steel road is simply one great narrow floor laid evenly between strips of grass, green and free from the dust of macadam, gravel or plain black, old fashioned dirt turned up by the semi-annual plowing and scraping of the road tax workers.

Expensive as may be the steel roads, think of the miles and miles of it that could be built for the annual maintenance cost of other roads.

## BARNEY OLDFIELD

This is not to eulogize Barney Oldfield, automobile racing man from Toledo. There is no occasion for a eulogy.

This is not even to say that Barney Oldfield is the greatest automobile driver on earth—for he is not.

This is merely to say that for all his much advertised professionalism he is a good sportsman and is honestly deserving of whatever credit there is coming to him in the breaking of the world's 1 to 5-mile track records.

There is a certain quality in sport—whether professional or amateur—which is praise-

worthy. This is the quality of making good. Oldfield has made good.

Last fall at Detroit he sprang from the second-class ranks of bicycle racing to a prominent position in automobile racing, by driving a big, clumsy, somewhat crude, but powerful car to victory in a 5-mile challenge race.

He drove to the start unknown and unheralded and finished without a mouthful of self laudation.

He had a good racer—this was his main comment. He said he could break the then existing track record of 1:02½. He tried without a sanction and did it to no purpose.

Then he tried again at the Empire City track on the occasion of the Decoration day race meeting and was successful in negotiating the oval in 1:01½.

Saturday at Indianapolis he cut 2 seconds more off of the time and was accordingly the first automobile driver to place the mile track mark under 1 minute.

Throughout his few races Oldfield has ridden in a gentlemanly, sportsmanlike manner. He has demanded no more glory than he has earned and he has not showed a desire to keep away from chances of defeat.

He has not appeared on the track loaded with excuses and pleading for delays. He has simply come out, ridden his races and gone back to Toledo.

He is a professional and he hopes to make a living at automobile racing. Well, what of it? It is not to be presumed that the great Frenchmen whose names are stuck on the high places of automobiling get their daily bread from such recreation as counting the branches of their family trees and the occasional pruning of a withered stem.

## LADIES AND AUTOMOBILES

The automobile has passed the stage when its driving and care is the exclusive property of men.

The ladies may no longer be compelled to cling, helpless passengers, to the seat while

their husbands or their brothers or their sweet-hearts handle the levers and guide the wheels.

Automobile driving has become an accomplishment so readily mastered that the women may themselves assume the mastery of the car in which they ride, and with their own more or less dainty hands claim that inexplicable but ever present desire to be the one who grasps the steering wheel and controls the all powerful lever that holds obedient the unloosed power of a dozen horses prisoned beneath the bonnet of shining brass.

It may be childish to feel that the greatest pleasure in automobiling comes to the one who holds the wheel, but it is a true condition nevertheless, and the fact that it is being demonstrated on every hand that women may safely gratify this very human desire will in the next 2 years draw more women enthusiastically into automobiling than all of the riding as mere passengers could attract in a hundred years.

Automobiles for women are simply automobiles. Gasoline, electric, steam—they can all be driven by women—all are driven by women.

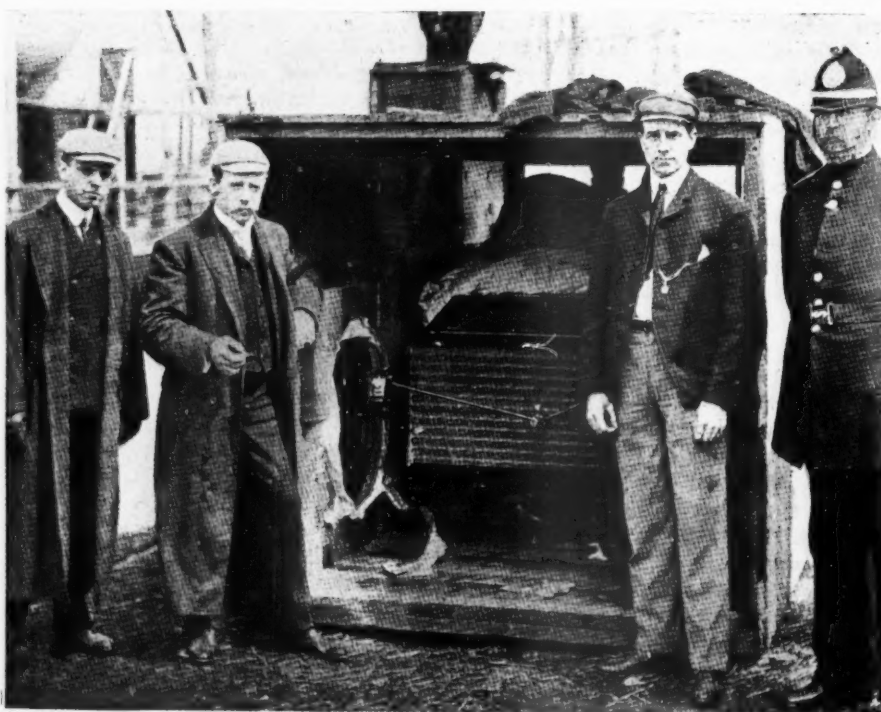
And the women who drive them are no less enthusiasts than masculine automobilists.

## LONG AUTOMOBILE TOURS

The latter part of this week the members of the Chicago Automobile Club begin the longest formal tour run in this country, it being the intention to drive to Mammoth Cave, Kentucky, and back.

It is, of course, to be hoped that the run will be successful, as it will create more or less newspaper comment, the character of which depends to a certain extent upon the performance of the cars in the tour.

The effect of a trip like this has a considerable influence upon the public, for while only a small percentage of those who contemplate the purchase of automobiles desire the cars for extensive touring, it is always gratifying to purchasers to know that their machines are capable of enduring throughout long trips.



FROM THE AUTOMOTOR JOURNAL

Winton and Owen's Arrival in Ireland—On the Docks—Winton and Owen at the Left, Mr. Anderson, Winton's Mechanic, next to the "Bobby"





FROM THE AUTOCAR

Alexander Winton on the Gordon Bennett Race Course with a Winton Touring Car

Hence long tours accomplished in first-class manner by the automobiles used are of direct advertising value to the industry.

Indeed, they are of greater value than might be supposed in comparison to formal endurance tests. In the latter, cars are driven under set conditions by expert drivers and no pains are spared to secure good records.

The club, or other party, tour shows the automobile under exactly the conditions of ordinary usage driven by ordinary operators.

The long tour, then, is in reality at this stage of automobiling an affair of rapidly increasing importance.

Aside, also, from the advertising value to the trade it provides recreation far above par.

It brings into consideration one of the greatest of the future uses of the pleasure automobile.

Automobiling is not always to be of racing and boulevard parading. The automobile perfected is essentially a cross-country machine in which all of the delights of travel are furnished in a manner never realized otherwise.

There are untold pleasures in rambling through the country and to do this day after day, amid new scenes and under new conditions, represents the acme of outing.

Brought near to any source of outdoor summer pleasure, the automobilist can as quickly change his route or vary his plans as the whims within him dictate and can at the same time indulge constantly or intermittently in whatever other means of sport or pastimes are agreeable to him.

Through it all he has the sustained pleasure of traveling over the country road faster and with less effort than by any other means.

The long tour of the big party may have drawbacks which prevent it from appealing to many persons, but it calls attention, broadly, to the delights of automobile touring and may be the direct cause of innumerable individual tours in which the automobilists drive through the country to suit their several inclinations.

The motorists of Pittsburg, Pa., have appealed to the police for protection from the small boys. These young "imps of Satan," as they are referred to by the automobilists, perch themselves on the rocks above Grant boulevard, the favorite driveway from Bellefield to the downtown section, and hurl stones and nails at the motor cars. Several persons have been hit.

## EARLY AUTOMOBILING IN FAR NEW ZEALAND

Even the tattooed inhabitants of New Zealand are becoming accustomed to automobiles, and some of the chiefs of the Maoris have no scruples of conscience in using wires from the wheels of motor cars to make rings for their noses.

The first automobile to reach Auckland was a 5-horsepower Star which was introduced in 1898. Shortly after this an Oldsmobile was shipped in and now there are half a dozen running in that city. The first white man to venture among the Maoris with an Oldsmobile was R. Whitson, and his experience was both interesting and amusing.

Mr. Whitson had stopped at an inn for lunch, leaving his car by the roadside. When he returned a few minutes later he found a crowd of gesticulating natives standing about endeavoring to find out what the machine was. Mr. Whitson switched on the battery, gave the starting handle a turn, and then looking up found that the natives had taken to their heels in affright. Leaving the engine running he returned to the hotel and watched developments from an upper window. Directly two of the bravest appeared and approached the car timidly. As it made no move toward them they plucked up courage and touched it gingerly. Then one of the savages gave it a shove, and finding the car did not strike back, he kicked it contemptuously.

In a few minutes the entire crowd returned and the owner of the car went out and with considerable difficulty persuaded one of them to take a ride. When he was returned to the

ground unharmed the rest were greatly pleased and all anxious to ride. A number were accommodated, but as the crowd kept growing larger and larger, Mr. Whitson finally grew tired, and broke away at the first opportunity followed by a howling mob which was disappointed at not getting to ride.

The scenery of New Zealand is strikingly beautiful and picturesque, and tourists will find it an ideal country for touring. Outside Auckland, in fine weather, the roads are excellent. The road near the famous Waiwera hot springs is of red gravel, but rain turns it to loose slush.



MOTOR AGE

A. Road near Auckland, New Zealand

## THE TRACK MILE UNDER A MINUTE

### Barney Oldfield in Match Race at Indianapolis Meet Breaks 1 and 5-Mile Records, Making Mile in 59 3-5 Seconds

Two seconds clipped off the world's 1-mile track record and 23½ seconds off the world's 5-mile track record was the feat of Barney Oldfield at Indianapolis, Ind., last Saturday.

This record-breaking run was made in the last heat of a match with Tom Cooper, the fastest mile being run in 59½ seconds and the 5 miles in 5:04½. The previous world's records were 1:01½ for the mile and 5:28 for the 5 miles.

#### BOTH DRIVERS UNDER RECORD

In the first heat of the race both Cooper and Oldfield lowered the 5-mile record, Oldfield doing it in 5:17½ and Cooper in 5:24. In the last heat Cooper made the 5 miles in 5:18.

The track was in excellent condition and the weather so propitious that it was confidently expected before the race that some sensational records would be made. Over 5,000 people crowded the grand stand in anticipation of the event and the other races of the post-poned program.

Three races were run before the big event of the day was announced. Then Cooper appeared on the track. His big yellow racer moved slowly away from the fence in front of the grand stand, and after he had driven a short distance Oldfield started from the grand stand. The timers started the race when the men were half a mile apart. Oldfield's time was taken when he passed the judges' stand, and Cooper's when he passed the half-mile.

#### THE RACE BY MILES

Oldfield did the first mile in 1:06 and Cooper in 1:04. The second mile Oldfield made in 1:02½ and Cooper in 1:03. Oldfield made the third mile in 1:02½, the fourth in 1:02½ and the last mile in 1:04. His time for the 5

miles was 5:17½. Cooper made the last 3 miles in 1:04½, 1:04½ and 1:06½, making the 5 miles in 5:24.

In the second heat Oldfield reached the half-mile post in 30 seconds and finished the mile in 59½ seconds. His time for the succeeding miles was 1:00½, 1:01½, 1:01½ and 1:00½; total time for the 5 miles, 5:04½. Cooper made the 5 miles in 5:18, lowering his record of the first heat by 6 seconds.

#### THE OTHER EVENTS

In the 5-mile race for cars of the 1,200-pound class Earl Kiser, with a General, won in 8:41, and Frank Moore, with an Oldsmobile was second in 8:42½. In the 5-mile, no weight limit class, Earl Fisher with a Winton, was first, his time being 7:45½. Edgar Apperson was second with an Apperson car, and Derange third with a Peerless.

The 5-mile handicap was won by Apperson in 7:48½, Kiser, second and Derange third. The 3-mile motor cycle race was won by Bert Corbet in 5:08½. H. Brandt was second and Harry Howe third.

## AFTER OTHER STAR PERFORMERS

### Officials of the Empire City Track Give Up Hope of the Match Race Between Winton and Fournier

The Empire City Trotting Club has issued a statement to the press declaring that owing to Alexander Winton's denial of his authorization of Charles D. Shanks to sign the contract for the races with Henry Fournier at the Yonkers and Cleveland tracks, it has abandoned all hope of the match between the two cracks forming a feature of its race meet on July 25 and will seek another star attraction. The statement sets forth the circumstances leading up to the signing of the contract, which with the contract itself were set forth in detail in MOTOR AGE at the time of the making of the match at the New York show.

## PEERLESS CARS CAN CLIMB HILLS

### This Fact Was Demonstrated in Pittsburg Contest Saturday by Winnings of Cleveland Machines—Interesting Events

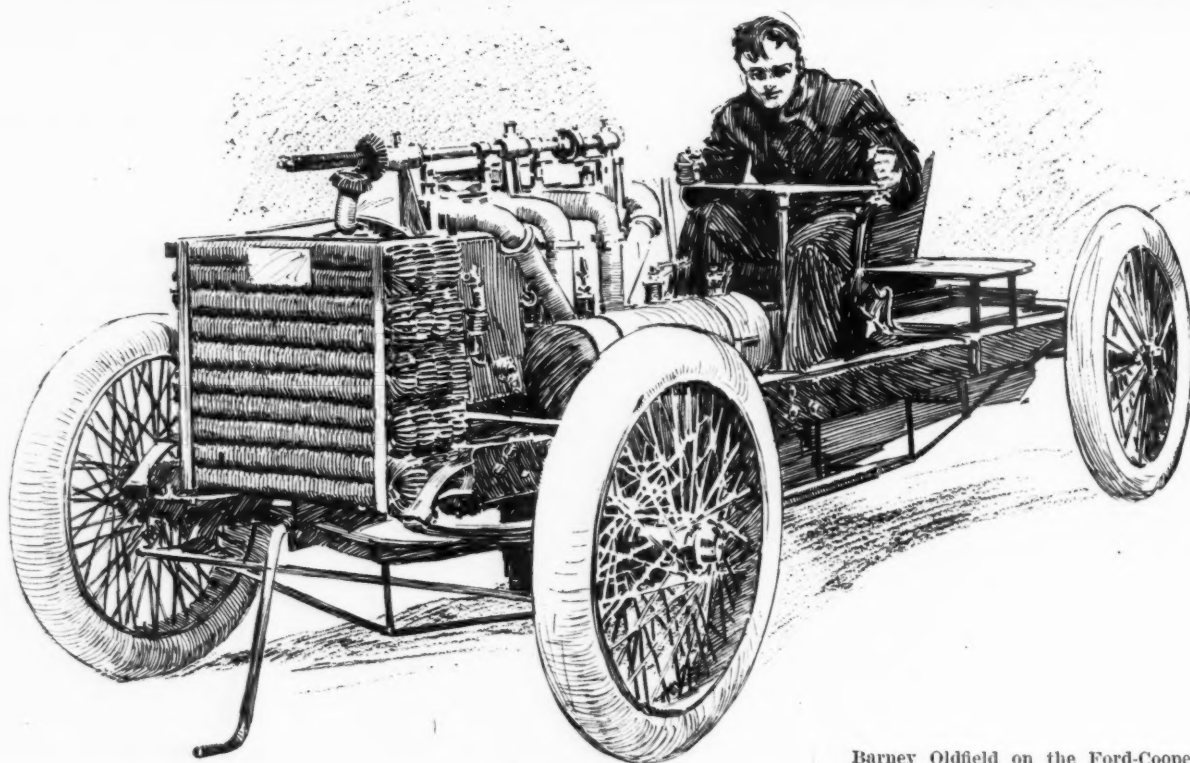
Pittsburg, Pa., June 21—The rainfall last Saturday did not discourage the automobilists of this city, and a large crowd turned out despite the slippery condition of the streets, to see the hill-climbing contest over the Serpentine drive in Highland park. It was the first event of the kind ever held here and great enthusiasm was manifested.

The contest was held under the auspices of the Pittsburg Automobile Club, and there were seven prizes offered. The first six prizes, handsome silver cups, were offered in the six classes into which the machines had been grouped according to weight and horsepower. The seventh prize was offered to the winner of the finals, in which the two making the best time in the various classes were the contestants.

#### LONG WINDING COURSE

The course was 2,204 feet, stretching from the bridge near the zoo to Mt. Bigelow. The first 300 feet of the course are practically level. Then a grade of over 6 per cent begins at the opening of a curve of 175 degrees, whose diameter is 110 feet. The course is a series of grades and curves from bottom to top. The level of the finish mark was 150 feet above the level of the starting point. Thus the course was one which was calculated to test to the utmost the capacity of automobiles in climbing hills. The result of the tests made proved entirely satisfactory to those who participated, as well as to the lookers-on.

Because of the rain the driveway was not in the best of condition, but the course was prepared as well as it could have been under the circumstances. Over the top of the drive was about a quarter of an inch of mud, which made driving difficult, especially on the sharp



Barney Oldfield on the Ford-Cooper Racer Which He Drove a Mile in 59 3-5 Seconds at Indianapolis, Saturday



curves. Many of the machines slipped, and the time was considerably lengthened. But on the whole the running was excellent.

#### THE OFFICIALS

The committee in charge of the event was composed of Thomas R. Hartley, chairman; Dr. John A. Hawkins and George W. Hailman. The judges were W. C. Temple, R. J. Pollard and Howard Nimick. The timers were W. H. Keech, Henry G. Wasson and W. C. Temple. Every precaution was taken to prevent accidents and none occurred.

Only one machine was allowed on the track at a time. Each car was given the track, and after it had passed the finish mark another was started, continuing thus until all had covered the course. The time of each contestant was taken, and the one covering the distance in the shortest time was the winner of the class event.

#### A FEW PROTESTS

Several protests were made, but this did not interfere with any of the machines entering the contests. These protests will be taken up and considered later by the committee. A protest against the electric machine of A. L. Banker, on the ground that a shunt had been put on the coil, decreasing the resistance. Protests were made against the cars of Reuben Miller and W. H. Artzberger because the machines had been built for four persons, while the entry conditions in the class in which they contested permitted machines built for two only.

The best time made in the various classes was as follows: Electrics, A. L. Banker, Waverley, time, 3:03; steam, W. H. Artzberger, Foster, time, 2:12½; gasoline cars under 1,000 pounds, Dr. Stewart, Northern, time, 3:37; gasoline cars between 1,000 and 1,500 pounds, T. F. Lovejoy, Pierce, time, 2:29; gasoline cars between 1,000 and 2,000 pounds, F. A. McCune, Darracq, time, 2:21½; gasoline cars over 2,000 pounds, A. E. Maston, Peerless, 2:11.

After the class trials a final contest was held for the special cup. This was won by A. E. Turner with a Peerless, the time being 2:10½. A special prize was given to A. E. Maston for the machine making the fastest time in all the classes. This time was 2:11, made with a Peerless.

A. L. Banker had a 32-horsepower Peerless racer entered, but it was decided that this car was in a class by itself, and therefore it was not permitted to contest. It was informally sent over the course in 1:29½, this time being made from a standing start.

#### EXTENSIVE COAST GARAGE

The Pacific Automobile Co. has purchased a tract of ground in San Francisco with a frontage of 145 feet, the ground costing \$75,000. A building will be erected at a cost of \$50,000, and this will be devoted entirely to automobiles.

The ground floor will be used for automobile storage and will have a capacity for over 300 machines. There will be reception rooms for ladies and gentlemen, and everything modern in automobiling conveniences will be provided.

The agencies of the company are the Winton Motor Carriage Co., the Olds Motor Works, the Vehicle Equipment Co., and the Locomobile Co. of America.

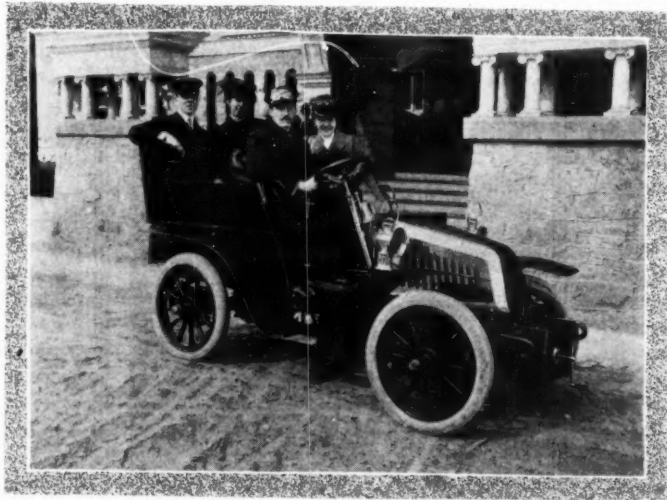
## LICENSE ORDINANCE RAPPED HARD

### Chicago Judge Issues Permanent Injunction Restraining City From Licensing Automobiles—Appeal City's Only Hope

Chicago, Ill., June 23—Perhaps permanently, for awhile at least, the city of Chicago is helpless to enforce its licensing ordinance, and consequently any numbering regulations, the latter, of course, hinging upon the former. This condition is the result of A. C. Banker's injunction case, Judge Healy, of the circuit court, today having upheld the temporary injunction and quashed the city's demurrer against it, the injunction being to restrain the city from requiring automobilists to be licensed in order to operate cars upon the streets of the city.

#### HISTORY OF THE CASE

The case grew out of the revocation of Mr. Banker's license. This occurred as in the form of punishment for alleged fast driving. Banker, soon after having become detached from his privilege of driving an automobile, applied for an injunction restraining the city from requiring him to have a license. This injunction



J. C. Brandes Driving the 12-horsepower Cudell on which He Rode from New York to Atlantic City in 4 Hours at an Average Speed of 35 Miles an Hour

was shortly afterward re-entered in a form which applied for restraint of the city to effect the free running of automobiles by other owners as well as himself. About a week ago a temporary injunction was filed in default, the city failing to appear.

The matter was then taken before Judge Healy, the city filing a general demurrer which asked that the injunction be quashed. The hearing of the case continued over 5 or 6 days, and this morning Judge Healy rendered the decision whereby the only hope the city has of compelling automobiles to be licensed or numbered is to appeal the case.

If it is decided to do this by the city officials they have until the expiration of the present session of the circuit court in which to file their appeal, which means that they must do it before the third Monday in July. If no appeal is taken before then, the city is out of the fight and the injunction becomes perpetual. In event of appeal, the injunction of course holds good until the case is finally settled, even though it be dragged into the supreme court. Hence automobilists are likely to be allowed to travel in peace for a considerable time.

It was brought out in the hearing before Judge Healy that the case was identical with a case of several years ago in connection with

the licensing of bicycles and in which the city was compelled to lay down.

In view of this settlement of the city's fight, it is hardly probable that the South Park board, which recently passed an ordinance requiring automobiles to be numbered if driven through the park system, will take any action toward its enforcement, for in order to number the cars they would be compelled to either establish a licensing system of their own or use the city license numbers. The former they would hardly tackle in view of the fate of the city ordinance, and the latter is out of the question on account of there no longer being city license numbers.

The automobile club took an active part in the Banker case through the work of its committee appointed to handle the matter. Charles E. Bartley, Charles W. Gray and F. C. Donald.

#### A. C. A. ABANDONS TEST

New York, June 23—There will be only one endurance test run this autumn—that to be promoted by the National Association of Automobile Manufacturers. That the Automobile Club of America was contemplating abandoning its attempt to run a reliability run in view of the makers having taken the matter of road tests of machines into their own hands was hinted at previously in MOTOR AGE.

Secretary Butler acknowledged yesterday that this conclusion had been reached and that the club instead would turn its Montreal run announced for next October into a pleasure tour.

"If the manufacturers wish to take the endurance tests, which we have run for two years past, off our hands," said Secretary Butler, "they are welcome to do it. We will have our run to Montreal, if a trip over the course proves the roads available, just the same, but it will be a pleasure tour on the lines of the Paris-Madrid touring section. With no restrictions in the way of controls or time schedules such a run will doubtless appeal strongly to our members and be sure of extensive participation. It will be vigorously pushed."

#### NEW CLUB AT BUFFALO

The Automobile Club of Buffalo has supplanted the Buffalo Automobile Club, which had been allowed to lapse into innocuous desuetude. The new club was organized in the office of William H. Hotchkiss, and a new constitution and by-laws adopted. Hereafter the organization will be more of a protective than a social body. President Hotchkiss announced that the secretary of the club, Frederick J. Wagner, 774 Ellicott Square, would furnish blanks to members of the club who are owners of automobiles and who have not registered with the secretary of state.

#### MOTOR CARS IN CENTENNIAL

The one hundredth anniversary of the settlement of Chicago and the establishment of Fort Dearborn will be celebrated during the week of September 26 to October 1, and preparations are being made by the automobilists of the city to take a prominent part in the festivities. A committee, of which A. C. Banker is chairman, is planning a number of road and track races.

## SEEING CHICAGO'S BEAUTY SPOTS FROM AUTOMOBILES



Drexel Boulevard, Chicago

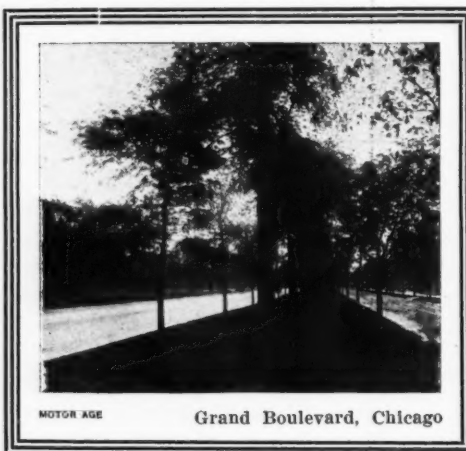


Lagoon in Washington Park

Seeing the parks of Chicago by automobile promises to be one of the popular forms of amusement and recreation this summer. Thousands of residents of the city as well as out-of-town visitors, are taking advantage of the opportunity offered by the automobile wagonettes which run from the downtown district out over the boulevard system and through the parks, thereby seeing the "beauty spots" of the city at a trifling expense.

Before the advent of the automobile the only practicable method of seeing the best part of the city was to procure a carriage and drive through the residence portion and the parks. This is rather expensive, and the great majority who could not afford to pay the price demanded, contented themselves with a walk through a part of the parks, depending on the street cars for the rest. These give only a view of the business streets, while the elevated roads, which go principally through alleys, afforded nothing to appeal to the sense of the artistic, rear porches of flats being the predominating feature.

This year the residents of Chicago who wish to show their friends from a distance the picturesque spots of the city can do so economic-



Grand Boulevard, Chicago

ally and enjoyably by taking advantage of the daily excursions through the parks by automobile. A line of electric wagonettes operated

by M. G. Cirkle leaves the Palmer House every day at 10 a. m., 2 p. m. and 7 p. m. The excursionists have the choice of two routes. One is over the south park system and the other through the parks on the north and west sides. The wagonettes carry ten persons comfortably and the fare is \$1.50.

On the trip south the route is along Michigan boulevard to Thirty-ninth street, then over Thirty-ninth to Grand boulevard and out to Washington park. The driver points out the homes of the well-known citizens of Chicago who live on these boulevards, and the ear is greeted with the names of people prominent in the spheres of pork, beer, dry goods and politics.

Entering the winding drives of Washington park at Fifty-first street the senses are soothed to peaceful rest by the pastoral scene. As far as the eye can see, the smooth, velvety lawn stretches away, while the trees offer a cool, inviting shade to the weary wanderer. There are no "Keep off the grass" signs in the park, and rich and poor alike are allowed to roam



Field Columbian Museum, Jackson Park



German Building and Beach, Jackson Park



anywhere unmolested. The visitor is treated with as much consideration as if he owned the entire park, as indeed he does, in a sense. The only rules in force are those of common politeness and courtesy, and these are operative everywhere.

The attractions in Washington park are the magnificent conservatory and the beds of flowers in the garden, now in riotous bloom, the lagoon dotted with row boats filled with merry young folks out for a day's pleasure and the broad expanse of greensward where there is ample room for the dozen tennis, baseball and golf games constantly going on. The refractory offers harmless refreshments in the way of ice cream soda and pop corn, and there is no objection to leaving a trail of peanut shells in the rear of the automobile.

From Washington park the route is over the world-famous Midway Plaisance, which has lost every trace of its one-time strenuousness, its babel of voices from many nations and its picturesque costumes of the thousands who once dwelt within its confines. Instead of this busy life there may now be seen a few nursemaids pushing baby carriages over the lawn, an occasional lounge on the grass under the trees, while off to the south are the rows of buildings of the Chicago university, representing the millions of dollars which John D. Rockefeller has seen fit to implant there. The Midway of today is far different from the Midway of a decade ago, and it requires a strong effort on the part of the visitor to realize what a change has been effected.

The same remarkable change is seen on entering Jackson park. The White City has disappeared and in its place are the conventional drives, groves and fountains of the regulation park. There remains of the great world's fair only the Fine Arts building, which is now the Field museum, the Spanish convent, now a fresh air resort for the poor babies of the city; the German building, which now does duty as a refreshment stand, and the Spanish caravels of Columbus, which idly lap the waves in the little lagoon overlooking the workmen who are filling in and clearing away the last traces of the forgotten city. The Jackson park of today is unrecognizable to the world's fair visitor of 10 years ago.

All these interesting spots are seen from the automobile, and the return trip is made over different drives of the two parks, then down Drexel boulevard, passing more of the elegant residences which made this driveway famous, then on Prairie avenue, with its blue book representatives galore, and back to Michigan boulevard, along the lake front, passing the Logan monument, the Art Institute and the little one-story building which nestles by the lake and has for years been doing duty as Chicago's temporary post office.

The journey ends at the hotel after a 2-hour ride during which the sightseer has been taken to the principal points of interest on Chicago's south side. A trip of similar duration may be made over Lake Shore drive, through Lincoln, Garfield, Humboldt and the other parks of the north and west sides. These offer attractions almost as interesting as those on the south side, and the visitor who covers this ground in a day has had a splendid view of Chicago with only a small outlay of money.

A line of gasoline breaks is also operated over substantially the same routes.

Other cities are adopting this method of showing their picturesque spots, the automobile offering a practicable, pleasant and agreeable mode of transportation far superior to the street car or even the horse and carriage.

## EFFORTS TO INCREASE MEMBERSHIP

### Both the American Motor League and the American Automobile Association Work Hard to Strengthen Their Numbers

New York, June 21—Recruiting is occupying the attention of the officials of the rival national bodies. The experience President Potter of the American Motor League has had in organization and the contrivance of inducements to join, is standing him in good stead and bringing encouraging recruiting results. Personal letters to prominent automobilists and an active canvas by the consuls of the league in various sections of the country have resulted in a rapidly growing membership that has already attained proportions that make the league worthy of consideration.

#### ORGANIZING LOCAL CONSULATES

Letters are being sent to prominent automobilists in 160 cities having a population of 25,000 or more with a view to the organization of boards of consuls to look after the interests of members in each important locality, and state organizations are being formed and preparations are being made to hold a national assembly in this city in January.

#### REFERENCE WORKS

The first book of tours and routes for automobilists is ready for the press and will cover over 3,500 miles of popular routes in the eastern and middle states.

An automobile hand book is also in press for the use and reference of members at home and on tour. Charles E. Duryea, chairman of the league committee on technics, is its author.

President Potter has in preparation a new book on "The Law of Automobiles," which will be published during the present year.

It is proposed to remit to the state and local organizations two-thirds of all the dues and fees received from their members, the remaining one-third to be retained for the use of the maternal body.

Over 300 official hotel and supply stations have been appointed during May and June.

#### BRISK A. A. A. RIVALRY

Secretary Butler, of the A. A. A., though less experienced than President Potter, of the A. M. L., rivals him in activity for the extension of the body he represents along the new lines laid down by the establishment of an individual membership. The A. A. A. secretary has the advantage of a substantial nucleus through the large aggregate of individual members of clubs already belonging to the association. Responses to the application blanks for individual membership sent out recently are bringing gratifying returns.

#### STATE DIVISIONS

The A. A. A. will also seek the establishment of state divisions. Among their earliest endeavors will be an organized effort toward the securing of legislation for the reciprocal recognition of license numbers among the different states.

#### MOTORS TO MEET HORSES

Minneapolis, Minn., June 23—The motor car drivers of this city are taking great interest in the midsummer automobile and motor cycle races which will be held at the Hamline track June 30, July 1, 2, 3 and 4. These races will be held in conjunction with the annual horse show and race meet of the Minneapolis Riding and Driving Club. The horse show has always

been one of the social features of the twin cities, and the automobile races this year will give it added interest.

There will be one automobile race each day of the meet, and handsome silver loving cups ranging in value from \$50 to \$10 will be given as first, second and third prizes.

On Tuesday, June 30, the "Derby" will be run. It will be a 5-mile race with flying start, and will be open to all machines. Prizes will be given on this day to the best appointed and most attractive automobile operated by either lady or gentleman.

On Wednesday there will be a 2-mile race with flying start, open to all automobiles selling at \$800 or less. On Thursday there will be a 3-mile race with flying start, open to all machines selling at \$1,500 or less.

The principal event of the week will be the pursuit race on Friday. This will be open to all machines, properly handicapped. A standing start will be made, the machines to be placed  $\frac{1}{2}$  mile apart. As a contestant is passed, he falls out and the result is left to the remaining machines according to positions at the end of 15 miles.

On Saturday will be a 1-mile race with flying start open to all machines. This will constitute trials for the track record. On the same day an open 5-mile motor cycle race with standing start will be run. This is for machines with motors of 2 horsepower or over.

#### OHIOANS PREPARE FOR THE FOURTH

Cleveland, O., June 22—David L. Troxel, of the Troxel Saddle Co., of Elyria, was in the city today to see Windsor T. White relative to the race meet to be held in connection with the celebration at Elyria July 4. The Cleveland Automobile Club has called a club run to take in the Elyria affair, and a good attendance of automobilists is assured.

The racing events to be held on the fair grounds during the afternoon are sanctioned by the American Automobile Association and will include a 10-mile race; 1-mile automobile race, best two in three open heats, open to machines weighing 1,200 pounds or less; 1-mile motor cycle race, best two in three heats; 3-mile motor cycle race. Mr. Troxel is an enthusiast on the subject of motor cycles and there are a number of these machines in daily use in Elyria, which accounts for this strong feature of the program. The entrance fee for each race is \$1 and entries close July 3, with D. L. Troxel, Elyria.

A representative of the Columbus Automobile Club was also in the city this week seeking to interest enthusiasts in the race meet to be held in that city July 4. In the morning there will be a parade of automobiles and in the afternoon will occur the track races, which will include seven events. Between the races Barney Oldfield, of Toledo, will go for records. The track at Columbus is said to be a very fast one, and it is thought Oldfield will make an effort to reduce his record made at Indianapolis last Saturday.

The neighboring village of Lakewood has established an automobile speed limit of 12 miles an hour. Clifton boulevard through the village has been a popular speedway for Cleveland enthusiasts, and it was here that Winton made some of his fastest tests of the new Bullet. Now, instead of speeding when they pass the city limits to the west, the enthusiasts of this city must cut down their speed from the Cleveland limit of 15 miles an hour to 12 miles an hour.

## WELL APPOINTED GARAGE FOR WHITE CARS

**Four Story Establishment Just Opened in Cleveland a Model of Its Kind—Repair Shop Especially Well Equipped—Persistent Rumors that Peerless Company Will Leave Cleveland Despite Officers' Denials—Scarcity of Wheels**

Cleveland, O., June 22—The White Sewing Machine Co.'s retail automobile department is now occupying one of the largest and best equipped garages in the country. The building is 96 by 196 feet and four stories high. The front is of pressed brick with stone trimmings. There are two large double doors and the front end of the first floor between these doors is partitioned off for the offices. There is a handsomely furnished suite of rooms, including a waiting room, check room, general office, stock room and private office for the manager, George S. Waite. There are toilet rooms for both gentlemen and ladies and the waiting room is well furnished for the use of patrons. The finish of the woodwork and furniture throughout the suite is bog oak, a dark rich color, which is relieved to a certain extent by bright rugs and wall hangings.

### AMPLE FACILITIES

The center and one side of the first floor is utilized for storage of "boarders." As there are about 175 White vehicles in daily use in Cleveland, the number of boarders is very large. Each regular boarder has his own space which is placarded. The rear of the first floor is utilized for light repairs. There are several pits and the work is facilitated by hanging incandescents fitted with wire globes. Only the minor repairs are done here, as the repair shop proper is on the third floor.

The other side of the first floor is used for cleaning racks. Fifteen cars can be cleaned at once and this department is kept constantly busy. Sixty cars have been cleaned and overhauled in one day. There is a compressor outfit which supplies air for tires throughout the several floors, and there are also taps outside. Buried below the first floor is a gasoline tank capable of holding 400 gallons. There is a pump connected with this and gasoline may be supplied direct to the tank of a vehicle by means of a hose. In the line is an automatic register, which records the amount of gasoline supplied to a vehicle. The entire outfit was built by B. F. Bowser & Co., of Ft. Wayne, Ind., who make such work a specialty.

### WELL EQUIPPED REPAIR SHOP

In the center of the building is an electrically operated elevator, capable of lifting 5 tons and large enough to take any car. The second floor is used for storage of new stock. The third floor is the repair department for the factory, as well as the repair shop for the local business, all repairs sent to Cleveland being handled from here. This department is equipped with machine tools and appliances for taking care of all repair work that may be required, thus divorcing from the factory all work of this character.

There will be several testing outfits of a kind designed by the company's experts. Each consists of a small electric generator, which supplies current to a bank of incandescent lamps. The machine to be tested is belted or connected by chain to the generator and after starting the vehicle's engine, the efficiency of the machine is determined by the brilliancy of the incandescents. By means of meters and

various switches, the efficiency of any engine may be determined.

### SHIPPING DEPARTMENT

The fourth floor of the building is also an adjunct to the company's factory. It combines the paint shop, finishing department and shipping department. Cars are brought from the factory without bodies, and after the bodies have been finished, the cars are assembled and boxed for shipment. The appointments of these departments are very complete and the arrangement will undoubtedly prove a very satisfactory one for the company. At the present time about twenty cars per week are being shipped and this output is gradually being increased. The other day the company shipped several cars to England. The English branch is in charge of Walter White, a son of the head of the company.

### TWO AMBULANCE CARS

A valuable adjunct to the White garage is the repair shop on wheels. The local establishment has two of these delivery wagons, which are kept always ready to make runs to assist patrons who have broken down on the road or who desire repairs to be made at their

homes. The wagons are equipped with complete outfits of tools and duplicate parts and tires.

The retail end of the establishment employs about twenty-five men, some of whom are on duty all the time. Of the 175 Whites that are in use in Cleveland, fifty-five are new touring cars. Manager Waite has sold his allowance of cars up to July 15 and cannot promise any more before that time. In the near future Mr. Waite will hold an opening and the society people of the city will be invited to inspect the fine establishment. The location of the garage is excellent. It is on Rockwell street, one block from Superior street and within a short distance of the public square and the new post office site. It is convenient to all the leading office buildings and hotels and this fact will make it a popular place for storage of other vehicles than Whites.

The garage makes a charge of \$25 per month for cleaning and storing touring cars and \$15 per month for smaller cars. This does not include fuel or repairs.

### RUMORS THAT PEERLESS WILL MOVE

Although the officials of the Peerless Motor Car Co. have repeatedly denied that the company is planning to move out of town, newspaper reports from other cities in this vicinity seem to indicate that the company is still looking around with a view to securing a more advantageous site. A recent report from Akron states that Secretary L. H. Kittridge has been in a conference with the officials of the American Hard Rubber Co. with a view to purchas-



MOTOR AGE

The White Garage at Cleveland



The Emergency Wagon on Second Floor



The Vehicle Storage Section



ing or leasing the plant of the Peoples Hard Rubber Co., which is now vacant. The plant is a large one and would be well adapted to the requirements of the Peerless company, but the friends of the company in Cleveland sincerely hope that the rapidly growing concern will elect to remain. Mr. Kittridge is still out of the city and the facts in the situation could not be learned at the time of writing.

#### WAITING FOR WHEELS

The Cleveland Automobile Co. is being seriously handicapped in the making of shipments through the inability to secure prompt deliveries of wheels. A recent visit to their assembling room showed a long line of assembled machines mounted on saw-horses. As soon as the wheels can be obtained and finished these cars can be shipped to anxious customers. Except for this drawback, A. L. Moore states that matters are progressing most favorably and cars are coming through at the rate of two per day. A number of the double cylinder models are now coming through and deliveries of these will be made in the near future. The Cleveland company has recently equipped a finishing department in a building on Bright street. The bodies, which are made at an East End factory, are brought here and finished and upholstered. The assembling of body and chassis is also done here. Another season Mr. Moore proposes to move into larger quarters, where all the work can be done together, and already he is looking around for a desirable location.

#### HUSSEY'S NEW FACTORY

The Hussey Drop Forging & Mfg. Co., which is the title of "Pat" L. Hussey's new concern, has just established a factory on Ax-tell street in the section of the city known as Newburg. He could not very well have gone farther away from the automobile district and still have been within the city limits, but as Newburg is the center of the steel producing industry in this section, and as "Pat" doubtless proposes to consume vast quantities of raw material, the location, is perhaps, a good one. The line of the new company will include drop forgings, steering wheels and a number of specialties.

### CHICAGO DEALERS ORGANIZE

**At Meeting Last Week Committee on Constitution and Organization Was Appointed—Meet Again This Week**

A meeting of the dealers of Chicago was called for last Wednesday evening at the automobile club house on Michigan avenue to discuss the organization of a dealers' association in accordance with the suggestions made in recent issues of MOTOR AGE.

There were nineteen of the twenty-three dealers of the city present at the meeting. The four absentees sent word that they were unavoidably detained, but would try to be on hand at the next meeting. It was the unanimous opinion among those present that much good could be accomplished by organization and co-operation and steps will be taken at once toward the desired end. A temporary organization was formed with C. H. Tucker, manager of the Winton Motor Carriage Co. branch, as chairman, and Fred Pardee, of Pardee & Co., as secretary. A committee consisting of C. H. Tucker, Fred Pardee, H. W. Jones, C. H. Owninger and J. A. Linville was appointed to prepare a constitution and by-laws for the organization, and these will be presented at a meeting this week.

### SMALL CARS USED IN BUSINESS

#### Heavy Demand for Runabouts in Washington—Injunction Case Relative to Regulations Hangs Fire—Garage Manager Wins

Washington, D. C., June 20—Notwithstanding the fact that the season is becoming well advanced, business with the local automobile dealers holds on remarkably well. There is, in fact, a splendid demand for machines. Business men are beginning to appreciate the fact that the small runabouts are just the thing for city use, and as a result machines of this type are having a heavy sale.

#### LIVERY STABLE SUIT DISMISSED

The suit against F. B. Weston, manager of the Automobile Storage & Repair Co., who was named as defendant several days ago on a charge of violating a clause in the police regulations by establishing and maintaining a livery stable where automobiles are kept for hire without having first secured a permit, has been dismissed. When the case was first called in court counsel for Mr. Weston asked that the information be quashed, explaining as his reason that the machines kept by his client were not for hire, but were stored there for individual owners. After deliberating over the case for a number of days, the court came to the conclusion that Manager Weston did not come within the law and dismissed the case against him. The assistant corporation counsel announced his intention of taking the matter to the court of appeals for a writ of error on behalf of the district government.

#### INJUNCTION CASE POSTPONED

The injunction proceedings instituted by Carl J. Lockwood against the district commissioners to restrain them from enforcing the proposed automobile regulations, which were to have a further hearing on June 18, have been postponed until June 25, at which time it is expected the case will be settled one way or another. In the meantime, the regulations have been suspended pending the court's decision in the matter.

Articles of incorporation of the Bassett Motor Vehicle Co. have been filed by James A. Black, Chas. W. Embrey, Virgil M. Fookes, of Washington, D. C.; Roswell S. Couch, Greenfield, Mass., and Linton T. Bassett, Holyoke, Mass., who will constitute the board of directors for the first year. The capital stock is \$2,000,000, divided into 400,000 shares of \$5 each. The term of existence of the corporation will be perpetual. Immediately after the incorporation of the company, the following officers were elected for the ensuing year: Roswell S. Couch, president; L. T. Bassett, treasurer; Hartley R. Walker, secretary. The main office of the company will be in this city, but its operations may be carried on elsewhere.

#### MOTOR CONGRESS IN PARIS

The prominent automobilists and manufacturers of continental Europe gathered in Paris last week, the occasion being the general automobile congress at the headquarters of the Automobile Club of France. President Baron de Zuylen presided. The first subject brought up for discussion was that of speed contests. It was treated by M. Jeantaud, who took the stand that, despite unfortunate and deplored accidents, they had done much for the industry and were still valuable and would prove popular, if properly conducted. The program,

which extends into this week, further includes discussions on such technical and mechanical topics as motors, valve construction, carburetors, ignition, transmission, frames, wheels, brakes, steering gears, lubrication, body design, and, in fact, automobile construction generally.

It was announced formally at the congress that the club, on account of the rapid growth of its membership—now over 2,000—had bought a house adjoining the quarters on the Place de la Concorde, in order to increase the club accommodations. There was no little comment among those present concerning the substitution of Gabriel for Henri Fournier as driver of the Mors car of the French team in the international cup race.

### BILL FOR UNTAXED ALCOHOL

**Will Be Introduced at Next Session of Congress—Assistance of Automobile Makers Desired in Work for its Passage**

At the coming session of congress a bill will be introduced to provide for untaxed denatured alcohol for use in manufacturing, and for burning, heating, lighting and other like purposes. This system is now in force in Germany, France, Great Britain and other foreign countries, and the industries of those countries have been greatly developed by the policy of cheap alcohol for manufacturing purposes.

Such an act would have a great effect upon the automobile industry in tending to effect the introduction of alcohol as a substitute for gasoline as fuel for internal combustion motors. Those most directly interested in the passage of the bill are seeking the assistance of the automobile manufacturers as their co-operation in bringing influence to bear on congress in favor of the desired legislation will be of material assistance in getting the bill through.

#### FORD COMPANY ORGANIZED

The Ford Motor Co., Ltd., has been organized at Detroit, Mich., with a capital stock of \$150,000, of which \$100,000 is subscribed for and paid in. The officers and stockholders are: John S. Gray, president; Henry Ford, vice-president and general manager; James Couzens, secretary and business manager; Alexander Y. Malcolmson, treasurer; John S. Dodge, Horace E. Dodge, Albert Stretlow, V. C. Fry, H. H. Rackham, John W. Anderson, Chas. J. Woodall, all of Detroit, and Charles H. Bennett, of Plymouth, Mich. The machine the company will place on the market will be known as the Fordmobile, equipped with Mr. Ford's double cylinder engine. The company expects to manufacture about 650 machines this season. Mr. Ford is now actively engaged in the production of the car.

#### SECOND HAND CARS SELL READILY

Second-hand machines are finding a ready sale in Pittsburg, Pa. One firm that started in business this spring has sold over twenty machines ranging in price from \$400 to \$1,100 each. Several of these were purchased by people who did not care to learn with a new machine, while the others were bought by people whose means did not warrant them in paying a high price for their cars.

The cup destined for the winner of the Paris-Madrid race which was to have been presented by the Royal Automobile Club of Spain, will go to M. Gabriel.

## THE READERS' CLEARING HOUSE

### ANOTHER SPARK GAP THEORY

Eldridge, N. Y.—Editor MOTOR AGE—I read the article "An opinion on spark gaps" by W. H. P. in the Readers' Clearing House of June 11 and was much interested in it, but I must differ with the writer because I am certain that there is something in the secondary gap that cannot be readily explained.

I too am an electrician, have a good knowledge of both high and low tension currents, and have also experimented considerably with high tension, high frequency currents and am quite confident that certain characteristics that develop in high frequency experiments with disruptive discharges may be properly assumed to explain the mystery of the extra gap.

By simply applying Ohm's law of electric currents, which is well known, the theory advanced by W. H. P. is shown to be incorrect. He says, "the intensity of the voltage of the current is reduced to such an extent by the extra gap that the current will jump across the points in preference to the path of higher resistance formed by the carbon."

Now as a matter of fact the ohmic resistance of the carbon deposit is much less than that of the air gap between the two points, as may be readily proved by actual measurements, if necessary; and then too, there are two paths for the current to pass through instead of one as inferred by him. We know that, as with other currents, the carbon path, and also the gap between the points, will carry currents inversely proportional to their respective resistances; the current does not follow one path only but divides itself between the two.

To simply reduce the voltage by the extra gap would mean to reduce the current of the circuit also, and a reduction of current would mean a smaller chance of a spark at the points of the plug, as the drop in voltage between them with a small current is proportionately less than with a strong current. If a reduction of voltage is really all there is to this problem, then the proper thing is to provide battery and coils that will give the correct voltage at the start and not waste a half of the battery power needlessly in the extra gap.

The gentleman's statement regarding the arc light circuit is all right, but does not necessarily explain the matter. He will agree with me that if only one 100-volt arc lamp—one spark gap—could be used to advantage on the circuit referred to, he would think it very unwise to provide a 500-volt dynamo and four other lamps in order to make one operate. He would not think of such a thing, but he would select a 100-volt dynamo for the one lamp—but that dynamo would have the same current capacity as would the 500-volt machine.

While about to experiment with the extra gap I used a plug that was perfectly clean but poorly insulated, so that my coil, which was easily capable of giving a  $1\frac{1}{2}$ -inch spark, punctured its insulation and no sign of a spark was visible at the points when first tried without the extra gap.

I then put in the second gap and was much surprised to see a spark at the plug points at once. I tried this several times with the same results; now I cannot believe that a reduction

of voltage—and current—caused the spark when using two gaps. I think, rather, that the effective voltage at the gap was either increased or the nature of the current materially changed and endowed with a greater power of discharging through air.

My experience with high frequency currents leads me to the conclusion that the insertion of the second gap so increases the frequency of the discharge that the current readily passes through the air gap, even though there is another path for it through the carbon deposit. To support this conclusion I would call attention to the following peculiarities of high frequency currents:

The frequency of a high tension current is enormously increased by each disruptive discharge—air gap—in series with its circuit.

With the increase of frequency comes the ability of the current to cross air spaces—spark gaps—with much greater ease than through solids of high resistance, such as the carbon deposits.

I do not wish to be understood as saying that the above is the solution of the problem. I simply say that to me it is the most reasonable that I have been able to consider in the short time that has been at my disposal for experiment. I hope, however, to conduct a series of extensive experiments in the near future with this wee puzzler, and in the meantime will be glad to hear from others through MOTOR AGE.—A. E. D.

### CLOSING CRACK IN VALVE SEAT

Ann Arbor, Mich.—Editor MOTOR AGE—The seat of the exhaust valve of my gasoline motor has a crack in it, extending from the seat down the side of the exhaust opening. The crack is about half an inch long. After the motor has been standing for some time and has cooled, water from the cylinder jacket accumulates in the valve chamber and the inlet valve cage has to be removed and the water soaked up with a piece of waste before it is possible to start the motor. Is there any way by which this crack can be closed and made water tight? The crack does not seem to affect the running of the motor or its power, as it closes up as soon as the motor gets warm.—W. K.

The crack can be fixed by brazing, soft spelter being used for this purpose. Care should be taken to properly protect the cylinder bore during the operation. The exhaust valve seat will have to be refaced after the crack is brazed and the valve ground to its seat to ensure a gas tight fit.

### UTILITY OF POCKET AMMETER

St. Louis, Mo.—Editor MOTOR AGE—I would like to give the readers of MOTOR AGE who are operators of gasoline cars the benefit of one of my recent experiences. The ignition mechanism of my vertical, four-cylinder motor is supplied with current from six dry batteries. An extra set is also carried, so that in case of failure of one set, the other set may be used.

While out on the road the other day, the motor began to mis-fire badly and finally stopped. The extra set of batteries was switched in and everything went smoothly for

about 7 or 8 miles, when the motor again showed signs of mis-firing and finally stopped as before. Both sets of batteries were then connected in series, but with but little better results. The two sets of batteries were next connected in parallel and then the motor started. It ran very well for some time, when the old trouble recurred and the motor stopped as before.

The nearest telephone was immediately put into use and a repair man called up, to whom the trouble was related over the wire. He arrived in about half an hour with a new set of dry batteries and the homeward trip was made without any further difficulty. The next day the two sets of batteries were taken back to the supply house from which they had been purchased. The cells were tested with a small ammeter and two cells of one set and three cells of the other set were found to be practically useless, showing scarcely any amperage. The other seven cells proved to be in good condition. I am now the proud possessor of a pocket ammeter and in future will know what to do in such cases. If I had had a pocket ammeter with me at the time the trouble occurred, six good cells out of the twelve could have been selected in a few minutes and time and trouble saved.—J. F.

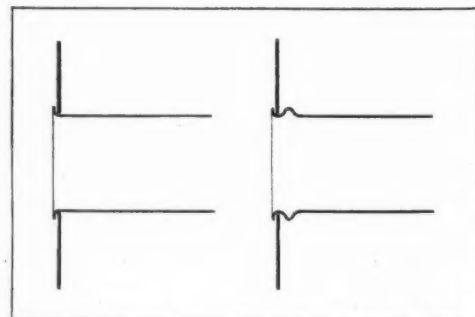
### IRREGULARLY RUNNING MOTOR

Jersey City, N. J.—Editor MOTOR AGE—I have a  $4\frac{1}{2}$ -horsepower gasoline motor which seems to have suddenly lost most of its power and will hardly drive the car. I have examined the cylinder, piston and piston rings and find all in good condition. The valves are a nice fit on their seats and the compression is good. The storage battery which is used for the ignition has been overhauled and the timing of the ignition is correct. The motor does not mis-fire, but runs unevenly with but little power and in jerks—sometimes almost stopping and the next minute racing like mad. I will be much obliged if you can suggest the cause of this trouble.—S. E.

The trouble described is probably due to one of two things. Either something is wrong with the carbureter or there is a loose screw or contact in the ignition mechanism. If the trouble be in the carbureter, it may be that the float is too light or that the needle valve opening is not sufficiently large. All connections from the coil and battery to the motor should be inspected and properly tightened.

### LOW EFFICIENCY OF A STEAM CAR

Columbus, O.—Editor MOTOR AGE—I know of a steam automobile that gave good service for almost two seasons, but toward the end of the second season began to use about one-third more gasoline and water. In the fall the water pump was taken out of the machine and re-bored from 9-16 of an inch to  $\frac{5}{8}$  of an inch in diameter, increasing the pump capacity



MOTOR AGE

Boiler Tube Expanding



about 25 per cent. A valve stem which had broken was renewed, which perhaps changed the valve adjustment slightly. This season the pump will scarcely keep up to the boiler capacity and the mileage on the gasoline and water supply has been cut in two.

The engine does not respond to the throttle readily and takes a considerable amount of steam to start. The valves and pistons are in good condition as no steam comes from the exhaust until the engine starts. I think there is too much lost motion in the valve gearing. New pins and studs were put in this season but were not made good fits. This lost motion causes the valves to open and close late and consequently to stay open too long. The engine has new ball bearings and the cylinders, valves, pistons and piston rings are in good condition. I am going to rebush and carefully fit every joint which has lost motion and readjust the valves and will then tell how it works.

What is the best way to head boiler tubes? They can, of course, be expanded by either a taper punch or by a standard boiler tube expander. Which is the best method of the two for this work? I find the most economical method of using cylinder lubricating oil is to turn on the lubricator for a few minutes after starting the carriage and then use no more until the engine commences to growl, then open the lubricator again for 2 or 3 minutes. In this way only a small amount of oil is used.—C. E. F.

The best method of expanding boiler flues is by a standard tube expander, as it makes a steam tight fit, which a taper punch or drift will not do. The illustration shows the results effected by both methods. The left view shows the tube expanded by a taper drift and the right view the result of using a tube expander, which makes a steam tight joint unaffected by either expansion or contraction of the tubes.

#### CURRENT USED WITH VIBRATOR COIL

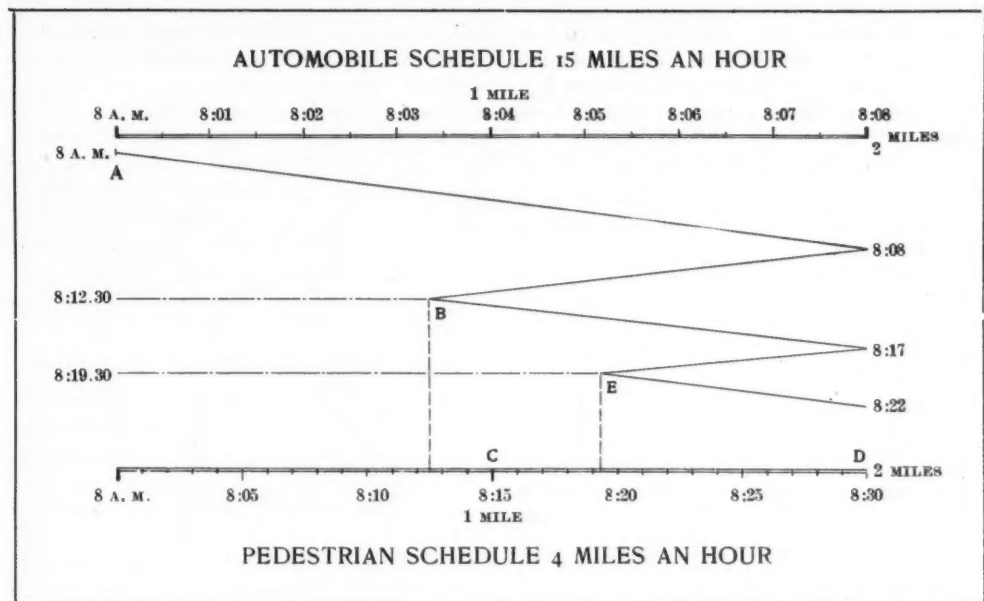
Boston, Mass.—Editor MOTOR AGE—Which uses the most battery current, a plain jump spark coil or a vibrator coil? As the commutator used with a vibrator coil generally has a longer period of contact than has the contact maker of a plain jump spark coil, it would be naturally supposed that the vibrator type of coil would use the most battery current.—P. G.

A properly designed vibrator coil will not use as much current as a plain jump spark coil. The self-induction in the primary circuit caused by the high frequency of the pulsations tends to check the flow of the current to a far greater extent in a vibrator coil than in a plain jump spark coil. The amount of the retardation of the current in the primary winding of a vibrator coil can be calculated to a nicety, when the number of pulsations of the coil per second are known, but this calculation involves the use of logarithms and a knowledge of higher mathematics.

#### COMPRESSION AND COMPRESSION SPACE

Montgomery, Ala.—Editor MOTOR AGE—I am thinking of building a horizontal, single-cylinder gasoline motor of 5-inch bore and 6-inch stroke. What power should it develop at a speed of 600 revolutions per minute and what compression should it have to give the best results at the above speed? Also what should be the length of the compression space?—H. A.

A motor of 5-inch bore and 6-inch stroke should develop about  $5\frac{1}{2}$  horsepower at 600 revolutions per minute. Sixty pounds gauge



MOTOR AGE

Mr. Prowse's Solution of the English Puzzle

pressure, or approximately 5 atmospheres, compression should be used. The required clearance expressed in terms of the piston stroke should be  $1\frac{1}{2}$  inches.

#### THE "BRITISH ARISTOCRACY" PUZZLE

Lonsdale, R. I.—Editor MOTOR AGE—I have duly pondered over the "British aristocracy" puzzle in MOTOR AGE of June 11, and respectfully submit the following solution:

Supposing one car breaks down and four people immediately start in the other one at 8 A. M., the other four at the same moment set out on foot, all from A and bound for D, 2 miles away. The car at 15 miles per hour gets to D at 8:08. Leaving three persons there the chauffeur returns, passing half-way post C, to B where he meets the four walking at 4 miles per hour, at 8:12:30. He takes on three and reaching D again by 8:17 leaves them and returns to the point E where the one person left at B, and still walking, is met at 8:19:30. Taking him up he once more turns back to D, reaching there at 8:22. Otherwise had the carriage not been used continually the pedestrians would not have reached D until 8:30. A very few seconds out allows for the embarking and debarkation of the passengers.—G. W. PROWSE.

#### TIMING THE EXHAUST VALVE

DeKalb, Ill.—Editor MOTOR AGE—I have built a gasoline motor of 4-inch bore and stroke, of the opposed cylinder type. The fly wheel is 18 inches in diameter and the rim is  $2\frac{1}{4}$  inches wide and  $1\frac{1}{2}$  inches deep. Is the fly wheel too light or too heavy for this motor? What is the exact time or portion of the stroke at which the exhaust valve should open to give the best results? The exhaust valve has a lift of  $\frac{3}{8}$  of an inch. I have wired the motor according to the diagram shown in MOTOR AGE of February 26, for operating two cylinders with one induction coil, but the motor does not run steadily and one cylinder mis-fires badly. Can you give me any reason for this? I am using a vibrator coil of standard make and a float feed carbureter.—E. J.

The weight of the fly wheel will depend altogether upon the speed of the motor and the degree of compression. With a 4-inch stroke the exhaust valve should open about  $\frac{1}{4}$  of an inch from the end of the explosion stroke and close exactly at the end of the exhaust stroke. The method of wiring described in

MOTOR AGE of February 26 is in successful operation on several standard makes of cars, so that the trouble must be due to a defective plug or a short circuit in the secondary wiring.

#### USE OF CURRENT IN SLOW RUNNING

St. Paul, Minn.—Editor MOTOR AGE—Does a gasoline motor when running at a slow rate of speed use more current from the batteries than when running at a higher rate of speed? It seems to me that it would.—C. R.

Supposing that the electrical circuit be closed through the contact maker for one-eighth of a revolution, the time of contact for a speed of 480 revolutions per minute would be  $\frac{1}{8}$  of a second and for a speed of 720 revolutions per minute the time of contact would be  $1\frac{1}{2}$  of a second. The total length of time the electrical circuit is closed in either case would be the same, as 480 multiplied by  $\frac{1}{8}$  is equal to 720 multiplied by  $1\frac{1}{2}$ .

#### MORE PICRIC ACID QUERIES

Alameda, Cal.—Editor MOTOR AGE—I noticed in MOTOR AGE of May 7, a comment on the use of picric acid in gasoline. How much picric acid is used per gallon of gasoline and for what purpose is it used? In what manner does it increase the power of a motor?—H. M. P.

About 3-10 of a pound of picric acid is required per gallon of gasoline. The picric-gasoline solution increases the power of the motor by increasing the intensity of the initial explosive force of the compressed charge in the cylinder after ignition.

Toronto, Can.—Editor MOTOR AGE—In a recent issue of MOTOR AGE I saw a letter from a correspondent, giving his experience with mixing picric acid in gasoline for motor cycle use. I would like to know the per cent of picric acid to mix with gasoline and the manner in which it is done.—N. B. E.

Gasoline will absorb about 5 per cent of its weight of picric acid. The gasoline should be occasionally agitated to insure a thorough absorption of the picric acid and allowed to remain for 2 days before using, when it should be carefully strained through three or four thicknesses of fine linen.

Peabody, Mass.—Editor MOTOR AGE—Will you inform me how much picric acid per gallon of gasoline should be used? Is picric acid explosive in itself and what precautions should

be used in handling it? What increase of power will picric acid give when used in 76 test gasoline? Does the acid mix readily with the gasoline or will the gasoline have to be agitated to cause the acid to mix properly?—C. E. G.

About 3-10 of a pound of picric acid is required for a gallon of gasoline. Picric acid is not explosive in its normal state and may be handled without any danger. An increase in efficiency of about 30 per cent is claimed for the picric-gasoline mixture, but it will probably in ordinary use be about 20 per cent.

New York City, N. Y.—Editor MOTOR AGE—Having read all the articles in MOTOR AGE about picric acid, I do not find any data relating to the quantity that should be used in the gasoline. As I have always understood that picric acid is dangerously explosive, is there any danger of a cylinder head blowing off or of personal injury?—W. R. W.

Gasoline will absorb or take up about 5 per cent of its weight of picric acid, but the addition of a small quantity of kerosene to the gasoline, will enable the gasoline to absorb about 10 per cent of picric acid. Picric acid is only dangerous when fused or when in a highly compressed state or mixed with other chemicals. There is no danger with the use of picric acid, of cylinder heads blowing off, or of personal injury.

#### NOT ENOUGH FLY WHEEL

Dayton, O.—Editor MOTOR AGE—I have a motor-cycle equipped with a 2½-horsepower motor. When the motor is started by the pedals it runs all right and will take the machine almost any place. If the belt be thrown off and the motor allowed to run light, it will run only when the charge is throttled, stopping almost immediately if the throttle is opened to its full extent and the ignition advanced. The motor is of the encased type with the fly wheels in the crank chamber. Can you suggest any reason for this stopping of the motor when running light, with the throttle open and the ignition advanced?—T. B.

The stopping of the motor is due to the fact that the fly wheels are either too small in diameter or of too light weight to carry the motor over the compression when the throttle is open and the ignition advanced. When the motor is driving the machine, the motor is carried over on the compression stroke by the momentum of the bicycle, due to its own weight and that of the rider. The energy required to perform this operation must, however, be transmitted from the rear wheel of the machine to the motor by means of the belt and is not a very desirable feature as it considerably shortens the life of the belt.

#### COMPRESSION IN TWO-CYCLE MOTORS

Aurora, Ill.—Editor MOTOR AGE—Is there any limit to the degree of compression that can be used in the crank case of a two-cycle motor? Would the mixture ignite upon entering the cylinder if it was under high compression? What would cause a four-cycle automobile motor to stop exploding as soon as the clutch is thrown in?—H. A. T.

The theoretical limit for the degree of compression or point at which self-ignition or spontaneous combustion should take place is 7.4 atmospheres, which corresponds to a gauge pressure of 95 pounds at a temperature of 480 degrees Fahrenheit. The degree of compression which it is possible to attain in the crank case of a two-cycle motor with enclosed fly

wheels is about 10 pounds, while with the usual, or outside, fly wheel type of two-cycle motor not more than 4 to 5 pounds pressure is possible. The reasons for a four-cycle automobile motor stopping when the clutch is thrown in are numerous—too weak or too strong a mixture; lack of proper degree of compression, owing to the clearance in the combustion chamber being too great or charge being throttled; too sudden application of the clutch, or the motor not being powerful enough for the work required of it, will all cause stoppage of the motor.

#### FLOAT FEED CARBURETER FOR HIGH SPEED

Jackson, Mich.—Editor MOTOR AGE—Which will give the best results for use with a high speed automobile motor, a float feed carbureter or a mixing valve? The motor runs at a normal speed of 1,200 revolutions per minute.—S. F.

A float feed carbureter should be used with a high speed automobile motor, especially if the motor speed be variable. A mixing valve is suitable for a motor of practically constant speed not to exceed 600 to 750 revolutions per minute.

#### GRADE CLIMBING ABILITY

Kansas City, Mo.—Editor MOTOR AGE—About what grade should a 1½-horsepower motor bicycle climb with a 130-pound rider on board?—W. M. M.

A 1½-horsepower motor bicycle with a 130-pound rider should climb a 15 per cent grade easily.

#### BUILDING TWO-CYCLE MOTOR

Berlin, Ontario, Can.—Editor MOTOR AGE—I am thinking of building a two-cycle motor of the type described in MOTOR AGE some time ago and would be obliged for the following information. In this type of motor is there any tendency to over heating under a heavy load? Can I obtain castings of this motor or can I buy one already made? Are there any of these motors in successful use? I have a design for a light automobile, somewhat similar to the Orient Buckboard, and am thinking of using this motor on it.—D. B.

Any gasoline motor, whether of the two or four-cycle type, will over heat if the cooling is not sufficient. Air-cooled motors will often over heat if under a full load for a great length of time. MOTOR AGE does not know of anyone making castings for the motor mentioned or who builds the complete motor. The motor was illustrated in MOTOR AGE at the request of a reader of the Clearing House department and it is not known if one has been built or is in successful use. The motor is of a conventional design and if properly constructed should give good results.

#### RUBBER TUBE INSULATION

Akron, O.—Editor MOTOR AGE—What is the best method of securing perfect insulation of the secondary wires on a gasoline automobile? I have the best insulated stranded wire that I can obtain, but there still seems to be a leakage of the secondary current.—M. W.

Pure rubber tubing should be put over the wires. It should be in continuous lengths for each wire, and not in short lengths as sometimes used, as there will be a leak at every break, if the wire is near any portion of the metal of the motor or running gear.

#### CHEMICAL ACTION IN CARBURETER

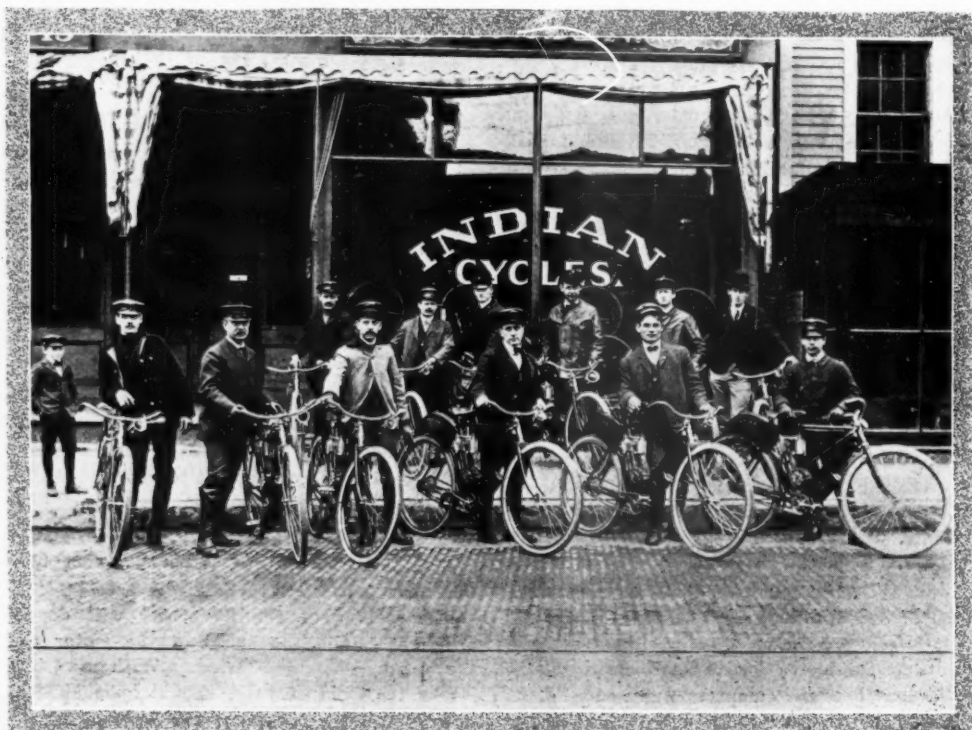
St. Louis, Mo.—Editor MOTOR AGE—Upon examining the carbureter of my car I frequently find a slimy green deposit in the float chamber of sufficient density to clog the gasoline inlet to the chamber. What is this deposit and what is the cause of it?—N. A. S.

The slimy green deposit is arsenate of copper, formed by chemical action between the copper in the brass casting of the carbureter and natural impurities in the gasoline.

#### REMEDY FOR VALVE STICKING

Memphis, Tenn.—Editor MOTOR AGE—I have considerable trouble with my gasoline motor due to the exhaust valve stems sticking. I oil them frequently but they become gummed very quickly and again stick. Can you suggest any remedy for this trouble?—F. N. L.

Oil should never be used as a lubricant on the exhaust valve stems. Clean them thoroughly and use flake graphite.



MOTOR AGE

Twelve of the Twenty-one Indian Motor Bicycle Riders of Springfield, Mass., in Front of G. H. Holden's Store



# AUTOMOBILE LAWS OF

# THE DIFFERENT STATES



State legislatures having come to the assistance of municipal authorities in the work of drafting measures intended to "regulate" the use of automobiles upon the highways, the whole subject of automobile legislation has become of great interest throughout the country. One of its evil effects is that owing to so much law, the layman has probably become confused as to the exact regulations by which his automobiling would be governed outside of his own burg. In addition to furnishing a clue to the entire situation, the laws side by side are also interesting in portraying the evident attempt of the various law makers to restrict—to effect class discrimination, if you please.

Below are summaries of the regulations established by the laws of thirteen states. Two states, Massachusetts and Michigan, now have laws pending in their respective legislatures. The other thirty states have no automobile governing laws whatever, aside from the general laws pertaining to the use of highways.

The summaries of the laws follow:

## MAINE

The rate of speed is limited to 15 miles an hour, and to 8 miles an hour in cities and towns unless fixed otherwise by local ordinance. Drivers must stop at request or signal by the putting up of the hand. Every automobile must carry a bell or other appliance for warning of its approach, and must also carry a lighted lamp between 1 hour after sunset and 1 hour before sunrise. The penalty for violation is a fine not to exceed \$50, or imprisonment not exceeding 10 days.

## NEW YORK

The rate of speed is limited to 20 miles an hour in sparsely-settled districts, 15 miles an hour in the residence districts of cities, and 8 miles an hour in the closely built-up districts. The driver must register with the secretary of state and must carry the license certificate with him when driving his car. The certificate number must be displayed on the back of the car. The car must be stopped, and also the engine, on signal from a driver of horses or other domestic animals. The fine for the first offense is not to exceed \$50.

## NEW JERSEY

The rate of speed is 1 mile in 6 minutes upon the sharp curves of a street or highway, 1 mile in 7 minutes in the built-up portions, and elsewhere, 1 mile in 3 minutes. Drivers must stop on signal. A certificate must be obtained from the secretary of state and the license number must be displayed on the back of the vehicle. The maximum fine is \$50.

## MASSACHUSETTS

The rate of speed is limited to 15 miles an hour in the country districts and to 10 miles in the thickly settled portions. Drivers must stop on signal from persons driving horses. The maximum fine is \$200.

A new bill is now pending in Massachusetts.

## ILLINOIS

The rate of speed is limited to 15 miles an hour unless otherwise provided by local ordi-

nance. Drivers must come to a full stop on request from persons driving horses. The maximum fine is \$200 or 3 months' imprisonment, or both.

## MISSOURI

The rate of speed is limited to 9 miles an hour. Drivers must stop on request from drivers of animals. A license must be obtained from each county and city in which the automobile is operated, and the number must be placed in a conspicuous place on the car. The number must also be placed on the lamps for use at night. The minimum fine is \$100, and the maximum is \$1,000 or imprisonment from 30 days to 6 months.

## VERMONT

The rate of speed is limited to 15 miles an hour in the country districts and 6 miles an hour in the business portions of town. Drivers must stop on signal from drivers of horses. The maximum fine is \$100 or imprisonment not to exceed 15 days.

## DELAWARE

The driver of an automobile must stop on signal from persons driving domestic animals, and must have a horn, bell or other instrument to give notice of his approach. The fine is not to exceed \$10 for each offense.

## PENNSYLVANIA

The rate of speed is limited to 1 mile in 3 minutes in the country districts and 8 miles an hour in the cities. A license must be procured from the treasurer of one of the cities or counties of the commonwealth, and the license number must be conspicuously displayed on the back of the vehicle. Two lighted lamps must be carried from 1 hour after sunset to 1

hour before sunrise. Brakes and a bell, horn or other signal must be carried. The penalty is a fine not to exceed \$100 or imprisonment for 30 days.

## VIRGINIA

The rate of speed is limited to 15 miles an hour. The driver must use due diligence and care not to frighten horses. The minimum fine is \$10 and the maximum \$100, and in addition the vehicle may be seized and impounded for any damages arising.

## CONNECTICUT

The rate of speed is limited to 15 miles an hour in the country, and to 12 miles an hour in the cities. No local ordinances can alter the speed limit. The driver must register with the secretary of state, and the initial letter of the state and the license number must be displayed on the vehicle. The car must be stopped on signal from drivers of domestic animals.

## TENNESSEE

The only special legislation in this state is an act requiring owners of automobiles to use lamps on their cars when running them at night. The penalty for violation of the act is a fine of not less than \$5, or not more than \$25.

## MINNESOTA

The rate of speed is limited to 8 miles an hour in the thickly settled portions of cities and villages, and 25 miles an hour in the outlying districts. The driver must stop on signal, and at least one lighted lamp must be carried after dark. Each vehicle must have a muffler, and a bell or horn. A license must be procured from the state boiler inspector at a cost of \$2, and the number of the license must be painted in plain figures upon the back of the machine in a conspicuous place. The figures must be 4½ inches high.

## KANSAS

The speed limit is 9 miles an hour and horses and mules shall have the right of way. Drivers must keep a vigilant watch for the approach of other vehicles, especially those driven by women and children, and shall warn them of their approach by sounding a whistle or ringing a bell, and if the animals give indication of fright, or if commanded by the other drivers, the automobile must be stopped. Every machine must display its license number on its lamps and there must be two lamps lighted at night. The license figures must be at least 3 inches long. The license fee is \$2 a year. The penalty for violation is a fine of not less than \$100 or more than \$1,000, or to a term in the county jail of from 30 days to 6 months, or both.

## WITHOUT LAWS

The following states have no laws regulating the use of automobiles: South Carolina, Indiana, Maryland, Louisiana, Iowa, North Dakota, Idaho, West Virginia, North Carolina, Florida, California, Oregon, Montana, Ohio, Kentucky, Colorado, Wyoming, South Dakota, Rhode Island, New Hampshire, Arkansas, Texas, Mississippi, Nebraska, Utah, Wisconsin, Alabama, Washington, Georgia, Nevada.

## IN THE FIELD OF AUTOMOBILE DEVELOPMENT

### PACKARD FOUR-CYLINDER CAR

The Packard Motor Car Co., of Warren, O., wishes to refute a statement which it says has been circulated in some quarters to the effect that it intended to retail its new four-cylinder Packard at \$2,500. This, the Packard company says, is far from the truth for the big car, which was shown for the first time at the New York and Chicago shows during the winter, will continue to be sold at a price very close to that asked for the cars of this model which have been sold this season—\$7,500. The company intends this to be a model de luxe and avers that the pains taken in construction and equipment forbid it from being sold for much less than the latter figure. The general introduction of the big car does not, however, affect the production and sale of the popular single-cylinder, Model F Packard which will be continued to meet the demand for a reliable touring car.

### HAYNES-APPERSON TONNEAU

Known so long as builder of a large, roomy, comfortable surrey, veritably of the family, if not of the racing, type, considerable interest was aroused when the Haynes-Apperson Co., of Kokomo, Ind., announced that it was preparing to introduce a tonneau pattern with the motor in front under a regulation bonnet. Hints concerning the general lines of construction of this new member of the Haynes-Apperson line have been given from time to time, and *MOTOR AGE* has already presented illustrations of the partially completed car, showing the chassis assembled and ready for the body. The accompanying illustration is a front view of the completed car, which is now about ready for its formal introduction to the trade.

In construction the motor is similar to that of the older Haynes-Apperson cars, being chiefly differentiated by its disposition under the front-end hood or bonnet. A Reynold "silent" chain running over a sprocket on the motor



MOTOR AGE

Haynes-Apperson Tonneau

shaft drives a counter shaft at substantially the same speed. This counter shaft is just back of the motor and carries the speed change gears which mesh with the clutch controlled gears on another and parallel counter shaft. The arrangement of the clutch gears is recognizable as the regular Haynes-Apperson transmission furnishing three forward speeds and a reverse drive, and in which the gears are always in mesh, with the drive determined by the action of the clutches. The clutch gear counter shaft carries a sprocket over which runs the long chain transmitting the motion directly to the rear axle.

The outer end of the motor shaft and the front counter shaft revolve in roller bearings, as, in fact, do all of the rotary parts, including the rear axle and front wheels, with the single exception of the main motor shaft bearings.

The water cooling radiator is placed in the rear of the car, just back of the rear axle. It is made entirely of aluminum and while light in weight has a large radiating surface. Its cooling effect is enhanced by a small fan which is rotated by a flexible shaft that is it-

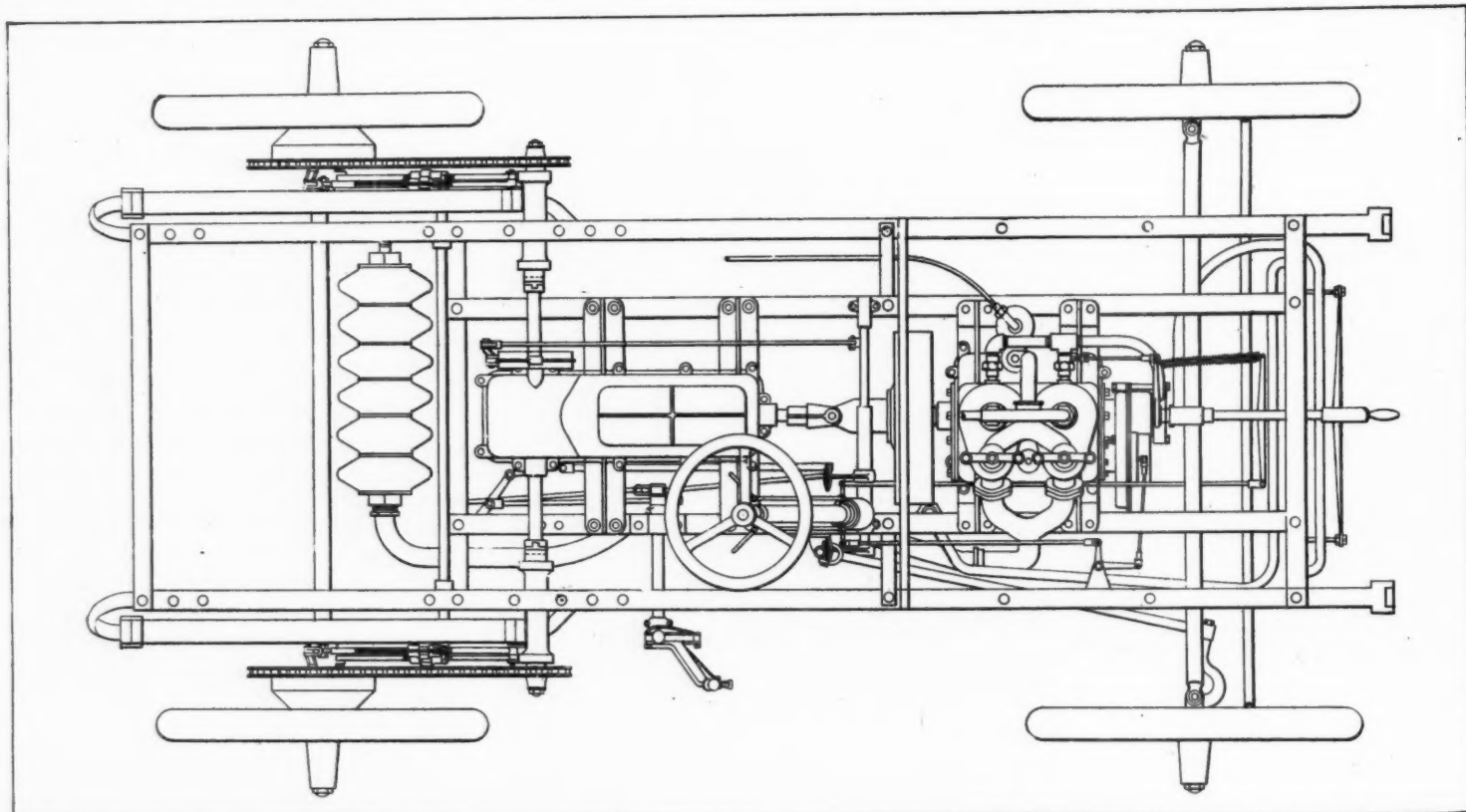
self driven by a small friction pulley engaging a disk on the forward counter shaft. This arrangement of the parts leaves the motor entirely by itself and thus exceptionally accessible for inspection or adjustment. When the bonnet is raised the forward cylinder is completely exposed for whatever purpose. Two other reasons given by the makers for the unusual disposition of the radiator, are that it relieves the occupants of the car from the heat radiated on warm days and that it avoids chance of injury in head end collisions or other accidents in which the front end of the car suffers most.

Considerable pains have been taken in the construction of the body, not only to secure attractive appearance but to insure that item which has always been predominant in Haynes-Apperson construction—comfort. The tonneau is roomy, being large enough to seat three grown persons and a couple of "kids," or, on emergency, five grown people may be crowded in. The front seat, of course, accommodates two occupants with room to spare. The body is carried on two semi-elliptical springs in front and two full elliptical springs in the rear.

The braking system includes a drum brake on the differential and emergency brakes on the rear wheels. Pressing upon the brake pedal applies the brake and releases the clutch simultaneously. In the ease of manipulation of the separate clutches whereby the speed changes are effected, the control of the motor and the operation of the brakes and reverse, the company lays great stress, particularly as the car is comparatively high powered and intended for fast rough service as well as for boulevard parading.

### HEDSTROM CARBURETER PATENTED

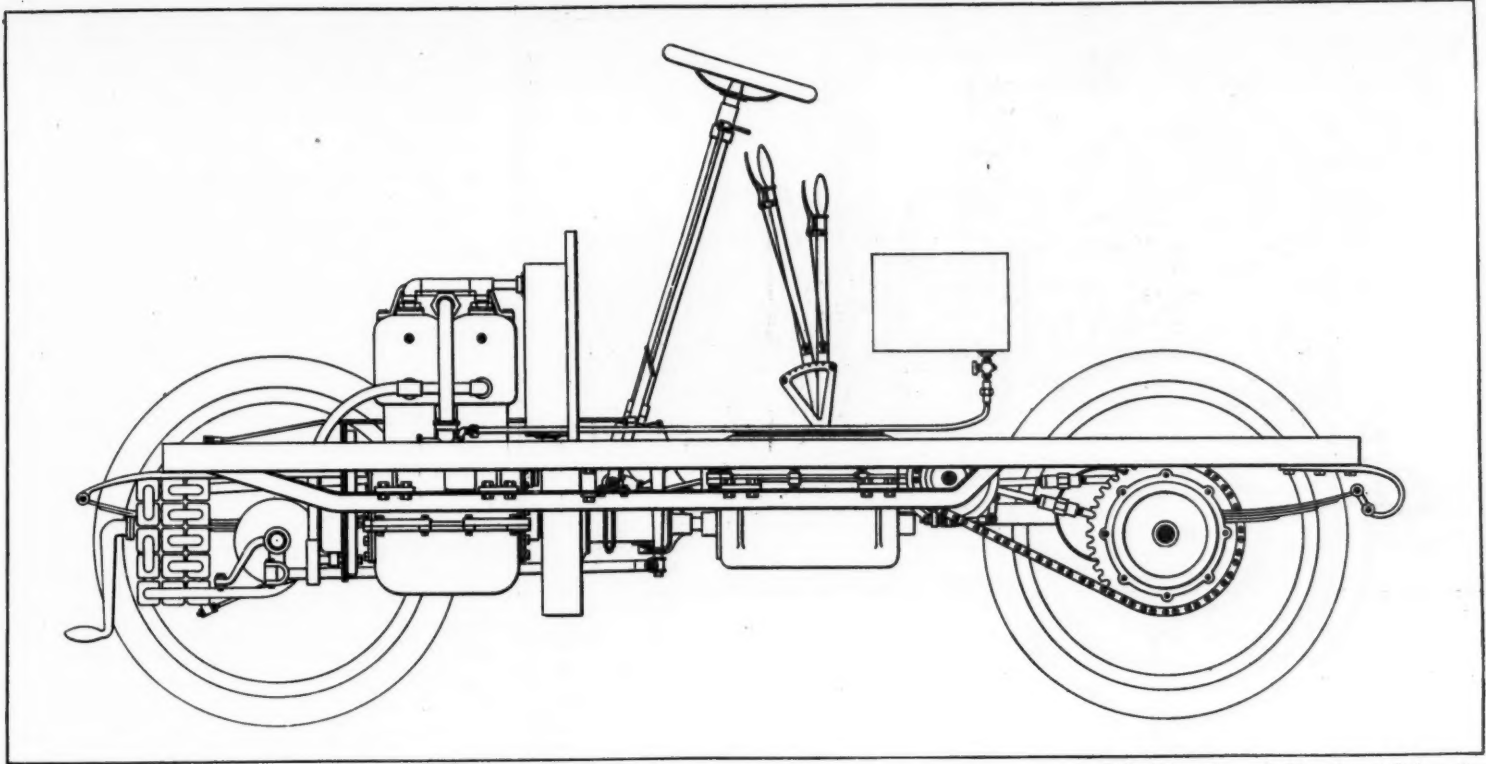
One of the most important features of the Indian motor bicycle made by the Hendee Mfg. Co., of Springfield, Mass., and a feature



MOTOR AGE

Plan of Chassis of Reber Car





MOTOR AGE

Side Elevation of Chassis of Reber Car

which has a good deal to do with the elastic control of which the machine is capable, is the Hedstrom carbureter. Letters patent have just been issued to Mr. Hedstrom for this carbureter, and it is probable that before long it will be known to the trade as a part of numerous automobiles as well as of motor bicycles. This prophecy is laid because of the fact that the method by which the carbureter furnishes delicate adjustment for atmospheric conditions aside from and without effect upon the general throttling means, is of as great an advantage in automobile as in motor bicycle operation. Conversely, the amount of mixture admitted to the inlet port of the motor can be regulated without altering its character. The center float feed whereby the level of the gasoline is not changed by inclination of the machine and carbureter is another feature which has attracted comment. The construction of the carbureter has been previously described in *MOTOR AGE* and a sectional illustration is herewith reproduced. Two of the five claims allowed on the carbureter are appended:

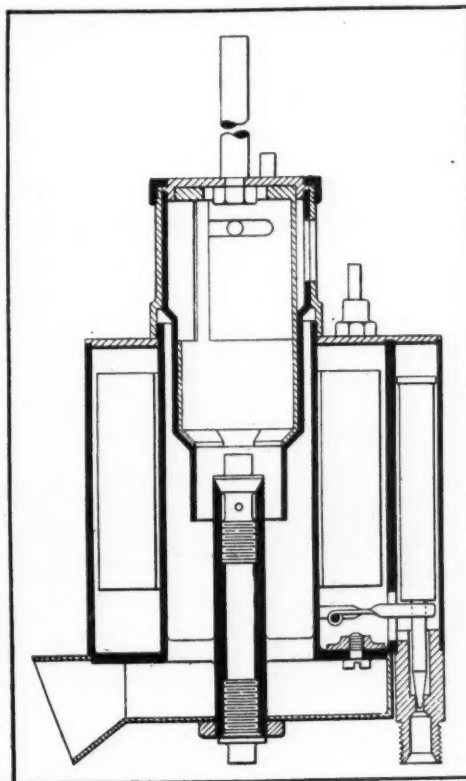
In a carbureter, a hollow cylinder constituting a mixing chamber provided with outlet and inlet openings at opposite ends thereof; a flange on the interior wall of said chamber, a tubular valve member for said outlet opening fitting closely said chamber and seated on said flange; a tubular extension of reduced diameter on said valve member, airports through the wall of the valve member and flange communicating with an air passage between said tubular extension and the wall of said chamber; another air port in said tubular extension located in a different plane from said first named port, a valve therefor, and means for varying the area of the air ports in the valve member and in its extension, independently, combined with a suitably connected supply-nozzle located in the extension of the valve member.

In a carbureter, a hollow cylinder constituting a mixing chamber having an outlet and an inlet opening located near the upper and lower ends thereof, a cylindrical tubular valve member fitting closely the upper portion of said mixing chamber and rotatable therein, there being an air passage between the wall of the mixing chamber and said valve member, a flange on the wall of said chamber on which said tubular member bears, there being air ports in the flange and in the upper end of said member, and there being other air ports in said valve member near the lower end thereof, said upper air ports being movable into and out of registration with the ports in said flange; means for rotating the valve member

whereby the area of the air ports in said member opposite the flange may be varied without changing the adjustment of the air ports near the lower ends of said member.

#### REBER GASOLINE CAR

The Reber Mfg. Co., of Reading, Pa., has effected a reorganization whereby it is incorporated for \$200,000, said to be fully paid in, as the Acme Motor Car Co. This new company, of which George D. Horst is president, and James C. Reber treasurer and general manager, has acquired, by purchase from the old American Bicycle Co., the Reading bicycle plant which was formerly operated by the Acme Mfg. Co. With work well established in this factory it is proposed to turn out Reber gasoline cars in quantity. The accompanying illustration shows the latest pattern of the Reber car.



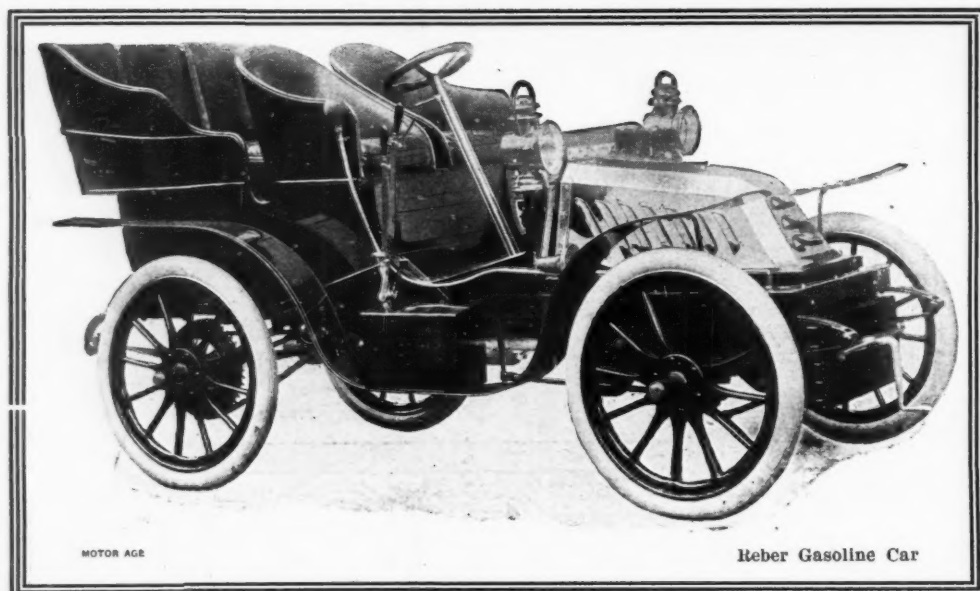
MOTOR AGE

The Hedstrom Carbureter

The company is candid in describing its car, making the exceptional acknowledgment that it has been influenced by foreign tendencies in design in the selection of its general plan of construction—vertical motor in front, sliding gear transmission, double side chain drive to wheels, removable tonneau. After having disclaimed the first and original introduction of these accepted systems of construction the company modestly claims that the originality of the Reber lies in the design and construction of the detail factors of the car, that the peculiar conditions of American usage might be successfully anticipated.

The vertical motor is of two cylinders and is rated at 12 brake horsepower. The construction implies an accessibility whereby all of the working parts, valves, cams, gears, bearings, etc., can be readily inspected without removal or readily removed when desirable. The carburation system includes a throttle valve in connection with the carbureter, controlled by a governor on the motor shaft. This governor is in turn under the control of a hand lever on the steering post so that it may be set for any speed between 200 and 1,000 motor shaft revolutions per minute. The motor lubrication is by splash system from the aluminum crank case, which is supplied by a pump from the reservoir on the dash board.

The initial transmission to the speed changing gears is through a strong cone clutch actuated by a pedal. The sliding gear transmission system provides three forward speeds and a reverse drive and is entirely enclosed in an aluminum case containing oil and insuring lubrication of all gears and bearings, including those of the differential, which is located in the rear of the casing. Each gear of the speed changing set is bolted to a common sleeve instead of being keyed in place, and is thus easily and independently removable. The gears are controlled by the conventional side lever with locking quadrant. There are universal joints between the motor, and the divided cross shaft, upon which is the differential, has universal joints at its ends connecting the outer shafts upon which are mounted the respective side sprockets for the final drive chains to the rear wheels.



Reber Gasoline Car

The brake on the differential gear is actuated by a pedal, while the emergency rear hub brakes are controlled by a side lever. This lever is provided with a saw tooth quadrant which permits of the brake being set and left in that position, a feature that can be readily appreciated when it is desired to leave the car standing on an incline. The application of either brake releases the clutch.

The running gear frame has wood side bars lined with steel flitch plates and is provided with a dropped angle steel sub frame upon which the entire motor and transmission set is mounted.

The water circulating system includes a comparatively small tank, a conventional radiator at the extreme front of the car, a centrifugal pump carried by the sub-frame and driven by friction from the motor fly wheel, and a copper tank in front of the dash under the bonnet. The gasoline is carried in a large tank under the left side of the front seat and is said to be sufficient for a radius of 150 miles over ordinary roads.

Jump spark ignition whose current is supplied by dry batteries is used. There are two sets of coils, either one of which may be switched into use. The coil is of the vibrator pattern and is carried in a rain proof case on the dash board. All wires are heavily insulated to insure against short circuiting.

The wheel base of the car is 78 inches and the gauge 54 inches. The wood artillery pattern wheels are 32 inches in diameter and are fitted with 3-inch clincher tires. The wheel steering set is provided with means for taking up lost motion caused by wear.

The entire body is fastened to the running gear frame by four bolts, and is thus easily removable without interfering with the mechanism of the running gear and power plant. The tonneau is attached by thumb screws. The car is finished in deep red striped with black. The upholstery is of red leather. All of the exposed metal parts are finished in polished brass.

#### WOODS ELECTRIC TONNEAU

The Woods electric tonneau is the most recently introduced of the several electric vehicles which have been brought out this season to meet the popular demand for electric carriages which resemble more nearly the commonly accepted patterns of automobiles than do the older designs which are based upon carriage construction. It is, indeed, a full-fledged

automobile in appearance, and its tonneau seats are as roomy and comfortable as those of any gasoline car; while its wide, deep divided front seats add still more to the impression that in its design every effort has been made to provide the features which have proven popular in the body construction of large touring cars.

The wheel base is long, 88 inches. The tread is standard, 56 inches, while the wheels are of the popular artillery wood style with steel hubs. The front wheels are 32 and the rear wheels 36 inches in diameter and all are fitted 2½-inch solid rubber tires. The weight of the complete car is 3,200 pounds. The tonneau is removable, leaving the car with a gracefully curved sloping rear body. The bonnet in front of the dash board is of the popular square or box pattern with beveled corners.

The battery comprises forty cells, with a capacity of 160 ampere-hours. It is divided, twenty cells being under the bonnet and the other twenty under the front or driver's seat. The radius of operation on one charge is given as 60 miles over level macadamized or asphalt streets. There are two motors of 2½ horsepower each, these driving directly to the rear wheels in regular Woods fashion. The controller furnishes four speeds forward and a reverse drive. The speeds are rated at 5, 10, 14 and 18 miles an hour. There are two brakes, one actuated by a pedal and the other by the controller lever.

The car is finished in Brewster green with

red running gear and natural wood finish dash board. The upholstery is in green leather. The equipment includes three electric headlights, one rear light and a small drop light in the rear of the canopy top that accompanies the car. The steering is, of course, by wheel. The car will comfortably seat five persons.

The Woods Motor Vehicle Co., 110 East Twentieth street, Chicago, states that it has given the car a hard test for over a month and feels confident that it will stand up well under the service for which it is intended. In fact, the entire construction is evidence of a desire to produce a rig which will stand up, for it is extraordinarily stout throughout, even in the running gear, which is of a peculiar center reach type.

#### SPAIN A POOR EXPORT MARKET

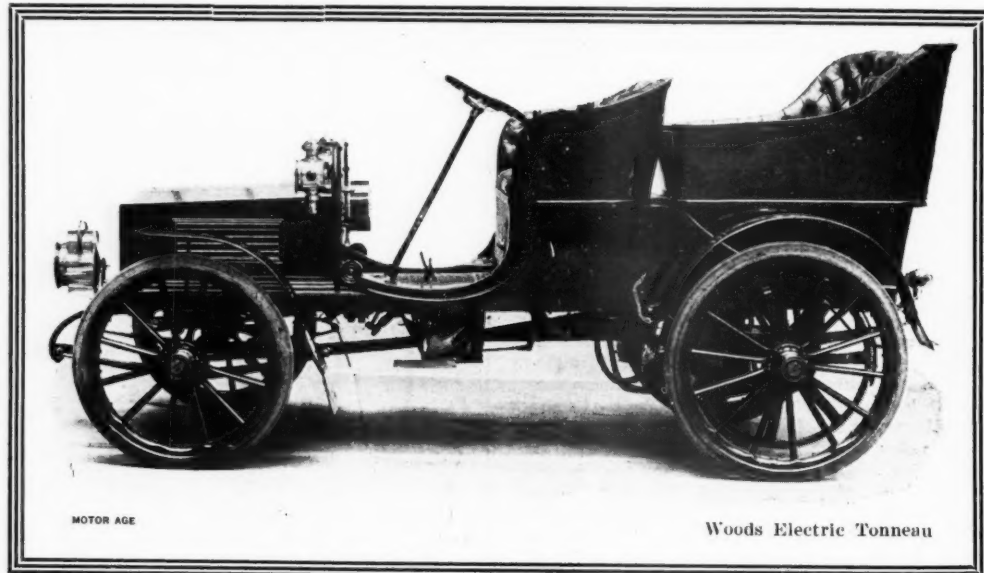
In his annual report, Consul General Lay, at Barcelona, says that American automobiles have not found any sale in Spain. A few steam and electric cars are imported, but owing to the impossibility of recharging the accumulators except in the large cities where electric works exist electric automobiles are of little use there, while steamers have never found favor. Nearly all the cars imported are of French make, and are propelled by gasoline motors. Those most in vogue are of 6 to 10 horsepower. So far, motoring has been a recreation only of the wealthy, but trials have been made of running motor omnibuses between inland towns having no railroad communications, and it appears certain that before long, and especially if their cost can be lowered, automobiles will be brought into more general use in Spain.

#### CHICAGO MOTOR MISCELLANY

The Winton Motor Carriage Co. branch delivered seventeen cars the past week.

Seven Peerless cars were sold in Chicago last week by A. C. Banker, one being delivered by express to President Charles W. Gray, of the Chicago Automobile Club. This order was rushed through to enable President Gray to drive the new car on the Mammoth Cave run.

About 300 automobiles went to the Derby last Saturday, but most of the machines were not admitted to the grounds, the occupants being compelled to walk in like ordinary citizens who went on the elevated cars. Members of the Washington Park Club who went in their automobiles were admitted to a part of the grounds with their cars.



Woods Electric Tonneau



## FROM THE FOUR WINDS



An automobile bus line is talked of in Sioux Falls, S. D.

Eugene B. Dye has opened an automobile salesroom and repair shop at 220 First street, Louisville, Ky., and wishes to secure the agency for a gasoline car.

The council of Omaha, Neb., has made the speed limit for automobiles 7 miles an hour in the business portion and 12 miles in the outlying districts of the city.

The Streator Automobile Co. is seeking a location at Blackwell, Okla. T., provided a certain amount of the stock of the company is purchased by Blackwell citizens.

The motor car drivers of Saginaw, Mich., will have to keep within the 6-mile-an-hour limit within the confines of that city if they do not wish to transgress the law.

H. V. Murrey, of the Cleveland Automobile Club, accompanied by his wife and a chauffeur, are making a tour through the east in a new car built by the Berg Automobile Co.

The Marin county, Cal., board of supervisors has passed a law limiting the speed of automobiles to fifteen miles an hour, and has prohibited the use of the mountain roads.

The advance catalogue of the Michigan automobile, manufactured by the Michigan Automobile Co., at Kalamazoo, Mich., has just been issued. The car was recently described in MOTOR AGE.

Because of the inability to secure suitable machines the automobile stage line from Detroit to Belle Isle has been abandoned for this year. The service may be inaugurated late in the fall.

The Salisbury Wheel & Mfg. Co., of Jamestown, N. Y., maker of the Salisbury automobile wheel, is erecting a new building and expects to increase the working force to about fifty men. E. D. Cook is president of the company.

Emperor William, of Germany, is so infatuated with the automobile that he is neglecting his ordinary horseback exercise. At present he depends on his chauffeur to operate his cars, but he is rapidly learning how to handle them himself.

The Automobile Club of France has postponed the festivities which were to take place on June 18, 19 and 20 by reason of the mourning for those who lost their lives in the Paris-Madrid race. No date has yet been assigned for the fetes.

An ordinance has recently been passed in Leipsic absolutely prohibiting the use of automobiles in most of the streets of the inner city, and in other parts allows them to be driven only along streets which are traversed by electric cars.

The Johnson Service Co., of Milwaukee, Wis., has a truck which has been driven about 1,000 miles since it was purchased. The truck has a capacity of 4,000 pounds, and it has made a record trip of 45 miles in one day with a

4,000-pound load. The total cost of the trip was \$3.

The Memphis, Tenn., city council has limited the speed of automobiles to 4 miles an hour through the public parks. The motorists of the city take the law philosophically and are trying to obey it. They don't see the use of hurrying down there, anyway.

The initial run of the Rochester, N. Y., Automobile Club was made last week, about 125 members participating. There were thirty-seven automobiles in line, and the trip was made to Summerville, where dinner was served at the Rochester Yacht Club.

The city council of Richmond, Ind., has requested the motor car drivers not to put lights on their cars, as they say the lights frighten horses "and are not any more necessary to an automobile than to a buggy." All of which goes to show that councilmen are fearfully and wonderfully made.

Mme. Du Gast thinks that if more women took to driving automobiles they would help better the sport. She expects to visit America in the not far distant future, and hopes then to put her views before the women of this country, who she says are clear sighted and first in every good movement.

The Fort Dodge, Ia., Commercial Club has been negotiating with the De Loura Automobile Co., of Perry, Ia., with the result that the company will remove its factory to the first-named city. A company will be formed with a capital stock of \$25,000. About a dozen men will be employed in the new factory.

The first arrest was made last week in Milwaukee, Wis., under the new law demanding the use of bells instead of horns on automobiles. The motorists of the city contend that they are privileged to use either, but the law states that bells must be used. A test case will be made, and then the city will attempt to enforce the remaining sections regarding speed and brake regulations.

Some of the claims made by the Detroit Motor Works, of Detroit, Mich., for the Star-Rite spark plug are that it has a heavy porcelain cap to protect the heated insulating tube, an air space inside of the shell to prevent short circuiting by soot or oil, a short protected sparking point not liable to warp out of position when heated and provision for expansion by a flat wheel spring under the check-nuts, so that loosening of the parts will not readily occur.

The purchaser of a Peerless motor car need have no misgivings about his ability to drive and care for it properly, if he thoroughly masters the contents of the instruction book given by the manufacturer. This work was prepared by C. G. Wridgway, manager of the New York branch of Banker Bros.' store, which handles the Peerless. Mr. Wridgway knows the Peerless car thoroughly and the instructions are so plain that the novice as well as the expert mechanic can easily understand them. The various parts of the mechanism are explained in plain, non-technical language. As an illustration of the appreciation of the book from its users, the following letter was recently received by the Peerless Motor Car Co., of Cleveland, O.: "I beg to acknowledge receipt of your book of instructions and thank you for the same. If I do not encounter more difficulties in my second thousand miles than I have in my first thousand, your book will not be badly soiled.—Gerard Bement, president Chadwick-Boston Lead Co.

## CHICAGO AUTO AGENCIES

## PARDEE &amp; COMPANY

1404-1406 Michigan Boulevard

Distributors  
of  
Guaranteed  
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"ASK THE MAN WHO OWNS ONE."

The Business Man's Friend.

## The Sandusky Runabout

A Model of simplicity. Quiet, Safe, Powerful and Economical. A neat light runabout built for American roads. Mud, Sand and Hills shrink before it. \$650.

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**SEARCHMONT** TOURING CAR  
THE FINEST THAT  
MONEY CAN  
PRODUCE  
GITHENS BROS CO 1412 MICHIGAN AVE  
CHICAGO.

## The Chainless Autocar

The Quietest Touring Car Built  
**FRANK P. ILLSLEY, Agent,**  
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## A. C. BANKER

456-458 WABASH AVENUE  
17 PLYMOUTH PLACE

Largest Automobile Store in Chicago

PEERLESS  
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ELMORE  
JONES-CORBIN

NATIONAL ELECTRIC. PROMPT  
CADILLAC. \* DELIVERIES.  
STEARNS GASOLINE.  
\* CADILLAC AUTOMOBILE CO. OF ILL.  
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## MEAD CYCLE COMP'NY

1243-1245 WABASH AVENUE . . . CHICAGO

ORIENT BUCKBOARD, \$375.  
MURRAY RUNABOUT \$650 with Artillery Wheels.  
CRESTMOBILE CHAINLESS RUNABOUT, \$750.  
HOFFMAN UTILITY CAR \$950 with Tonneau.  
NATIONAL GASOLINE TOURING CARS. 2 Cylinder \$1500, 4 Cylinder \$2500  
BENZ IMPORTED GERMAN CAR, \$3500.  
**SECOND HANDS** of all kinds. Demonstrations at your convenience.

THE MORLOCK RUNABOUT  
\$650

The best hill climber in the city. 5 H. P., and easy to operate. Immediate delivery.  
**P. J. Dasey Co., 19 La Salle St., Chicago.**



# RECORDS



(A FEW OF MANY)

FOR THE

# DUNLOP TIRES

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494 Atlantic Avenue

**NEW YORK:**  
97 Chambers Street  
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**PHILADELPHIA:**  
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**BUFFALO:**  
22 W. Chippewa Street

**CLEVELAND:**  
77 Bank Street

**DETROIT:**  
68 State Street

**CHICAGO:**  
136 East Lake Street

**MINNEAPOLIS:**  
117 So. Sixth Street

**DENVER:**  
1564 Broadway

**SAN FRANCISCO:**  
461 Mission Street

**ATLANTA, GA.**  
66 N. Broad Street

**STANLEY STEAM CAR:—**

First award in Mass. Auto. Club Hill Climbing Contest, Boston  
April 20th, with "Dunlops."

**STEVENS-DURYEA CAR:—**

First award in same contest (in the Gasoline Class) fitted with  
"Dunlops."

**KNOX DELIVERY AUTO:—**

First award in New York Commercial contest, on May 20th and 21st,  
with "Dunlops." (Weight of vehicle 3,800 lbs.)

**STANLEY STEAM CAR:—**

World's Mile Record, at Readville, Mass., on May 30th, with  
"Dunlops."

**C. H. CURTIS "HERCULES" MOTOR CYCLE:—**

First award in New York Motor Cycle Club's Hill Climbing Contest,  
May 30th, with "Dunlops."

**They Can be Relied Upon**  
To Stand the Test on All Kinds of Motor Vehicles

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**THE HARTFORD RUBBER WORKS CO.**

HARTFORD, CONN.



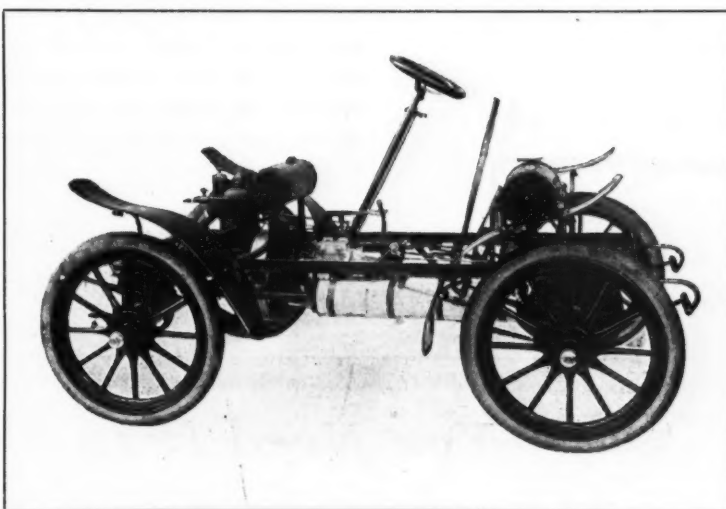
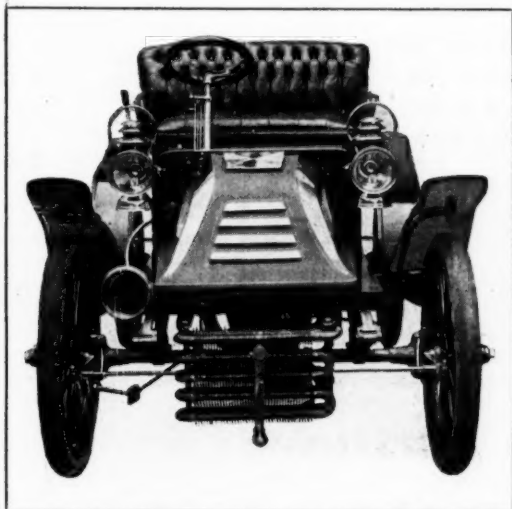


## ANNOUNCEMENT

# HOLLEY LIGHT TOURING CAR

1903-4 Model,  
.....Price **\$650**

**With Wood Wheels and Fenders.**



**A**BOVE cuts show our perfected car on which we are now making deliveries. A glance will show up-to-date construction in every part as well as the completed vehicle. There is no car in this country selling at the same price which can be compared with it in workmanship, material and operation. We invite the closest inspection on every part entering into its construction, as well as the details of our assembling. Columbia lock-nuts used throughout. The motor we have manufactured in large numbers for over a year, and every part we guarantee to be interchangeable. The bevel gear transmission is the acme of perfection of the sun and planet type.

It is hardly necessary to say anything concerning the Longuemare carbureter which has been on the market over six years, and 20,000 are in use. We use the best spark and coil plug that money can buy, automatic lubricator feeding engine and transmission, strongly constructed brass trimmed hood.

Remember we are not a new firm offering the trade an experiment, but bear in mind that Holley motors broke the one mile world's record at Pan-American Exposition, Buffalo, 1901, and also won the Boston-New York test, July 4-5, 1902. Why not run down to Bradford and take a ride over our boulevards? (Mud 2 ft. deep.) It will cost you some time and money, but you will certainly know what you are buying. Our agency list is growing daily.

**Holley Motor Company,** EARL HOLLEY,  
Sales Manager **Bradford, Pa.**

**CENTURY****AGENTS:**

New York City, N. Y.—  
Banker Bros., 141-143  
W. Thirty-eighth street.

Providence, R. I.—H. G.  
Martin & Co., 196-200  
Exchange street.

New Britain, Conn.—Con-  
necticut Automobile Co.,  
78 West Main street.

Asbury Park, N. J.—A. A.  
Taylor.

Philadelphia, Pa.—Banker  
Bros. Co., 629-633 North  
Broad street.

Oneida, N. Y.—John Max-  
well.

Attica, N. Y.—Hugh Mil-  
ler.

Buffalo, N. Y.—J. A. Cra-  
mer, 602 Main street.

St. Joseph, Mich.—Trus-  
cott Boat Mfg. Co.



PRICE \$750

**TOURIST****AGENTS:**

Dayton, Ohio—G. W.  
Shroyer & Co., 106 North  
Main street.

Minneapolis, Minn.—  
Northwestern Motor Ve-  
hicle Co., 112 South  
Sixth street.

St. Paul, Minn.—Wm. Rin-  
ker, 324 Wabash street.

**FOREIGN.**

Canada—Wilson & Co., 144  
Bank street, Ottawa,  
Ont.

Mexico City, Mexico—Leon  
Wolf, Zuleta 10, Aparta-  
do 394.

London, England—R. Rey-  
nolds, Jackson & Co.,  
Albert Gate Mansions,  
Knightsbridge.

Lisbon, Portugal—Carlos  
Carvalho & Co.

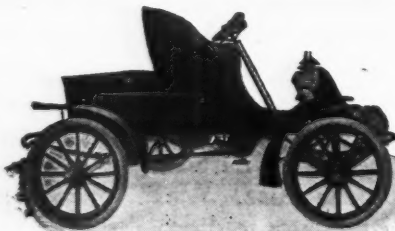
**THE CENTURY**

is a superb gasoline car for constant use. It is not a delicate machine, overloaded with mechanical "ginger bread" nor is it a raw, crudely built car. It has the highest degree of mechanical refinement in design and construction, and is simple, strong and powerful. Ask us to tell you why.

**CENTURY MOTOR VEHICLE CO.**

SYRACUSE, N. Y., U. S. A.

*You Need It In Your Business*

**The ELMORE AUTOMOBILE**

is the most simple, practical and reliable car ever put on the market. It is propelled by the famous Elmore motor, whose two cylinders have fewer parts than a single cylinder of any other type.

Either engine will propel carriage should the other be cut out. (A very important fact.)

Has dynamo and storage battery. Motor will start and carriage will run on either. (Another important fact.)

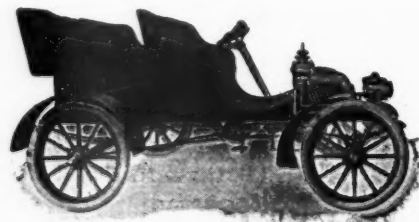
You can charge the battery from the dynamo while running the carriage, which is another important fact.

Has had a practical test of over three years' manufacture.

Two first-class certificates in New York-Boston Endurance Run. Have been used in 1000-mile tours without trouble. And still more important facts.

Doctors' and Business Men's favorite car, Model 7, . . . . \$800

Tonneau Touring Car, Model 8, . . . . \$1400



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Member of National Association  
of Automobile Manufacturers. . .

**Clyde, Ohio**

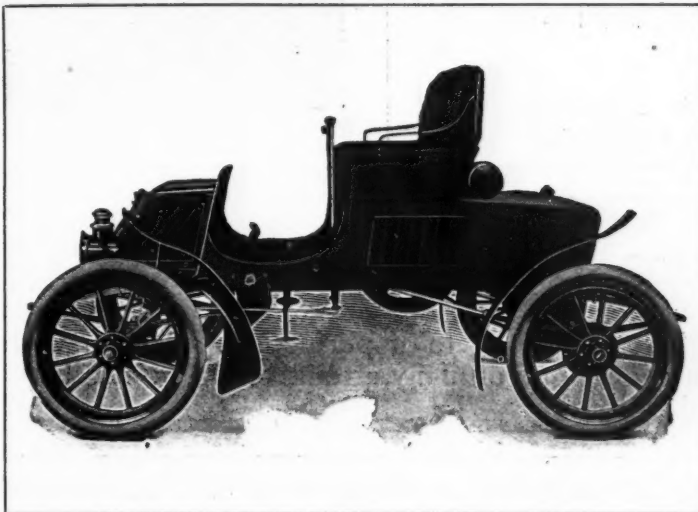


# Always a Little Better

is our "slogan" and the constant improvement in the

## Rambler TOURING CAR

is the best evidence of the success attained. Rambler horse-power is actual, not estimated; practical, not theoretical, and is sufficient to drive the carriage anywhere. Rambler construction means long life and little trouble—both good things to have. Our booklet is yours for the asking; it explains the carriage thoroughly.

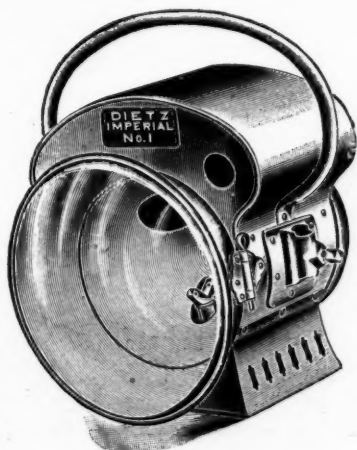


THOMAS B. JEFFERY & CO., :: KENOSHA, WIS.

P. S. The Carriage sells at \$750 at the factory.

# DIETZ No. 1 Imperial and No. 1 Separate Generator

(ACETYLENE GAS)



are exactly suited for use as headlights for small runabout machines.

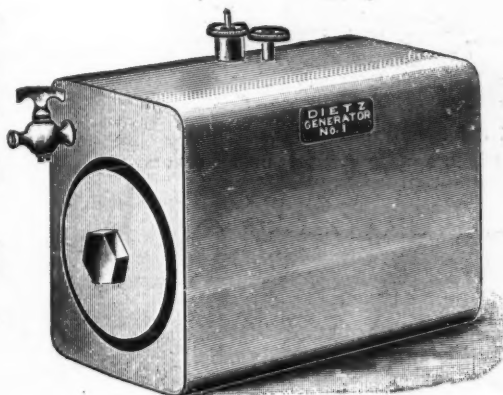
The Generator holds 1 lb. of carbide, and will run this lamp ten to twelve hours. It will run it that long continuously, or it can be used time and again—turned off and on, to-night, tomorrow night, or next week, until the total time it has been alight equals ten or twelve hours.

Will any other lamp do this?

The **No. 1 Imperial** has one-half foot (14 litre) burner and will light the road 500 feet.

Let us sell you a set. You can return them if not entirely satisfactory.

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## R. E. DIETZ COMPANY,

ESTABLISHED 1840.

37 Laight Street, NEW YORK.

"In my two years' experience with a Locomobile I have never had an accident with the exception of a punctured tire."



An Unsolicited  
Testimonial



"I am the owner of one of your earliest Steam machines, No. 7 (built in 1899), which still gives good satisfaction."



An Unsolicited  
Testimonial

**Our Steam Cars** for 1903 are the result of over four years of manufacture, in which time we have made and sold 5,000 vehicles. Our models are comfortable and convenient; mechanically, they have been brought to a high state of perfection. Prices are low. The **Box Front Runabout** shown is only one of many attractive styles. It holds 14 gallons of fuel, and is powerful and smooth riding.

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**Model 85 Stanhope. Price \$1500**

New style it is in a class apart from all others. Massive, substantial, luxurious.



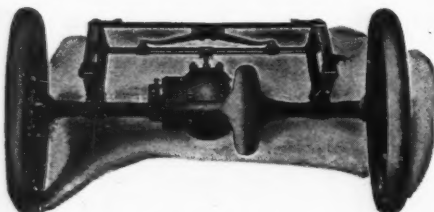
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This is the long distance record breaker. Fitted with thirty-six large cells of Western Battery, it is the most powerful of all electric runabouts.



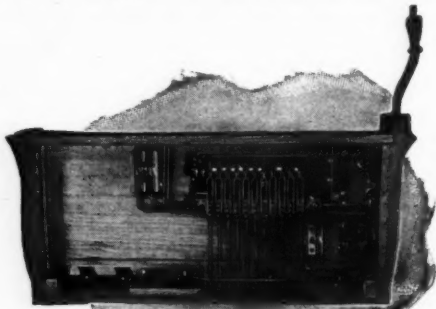
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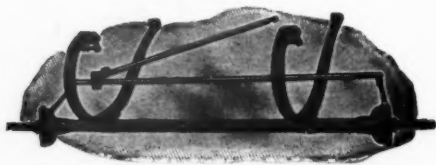
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No Chain. No Noise. No Vapor. No Odor. No Vibration. Just an electric motor and axle, all inclosed and extremely simple, all motion rotary. Always under complete control, safer in fact than a family horse.



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This one lever starts, stops and reverses a National; gives four speeds in either direction. No grease nor gears. A child can operate it with ease and perfect safety.



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"It is the smoothest running machine I have ever seen; easy of operation and perfectly reliable."



From a letter from a customer who had previously owned two foreign cars.



"It is almost absolutely noiseless, climbs any hill I have put at without trouble, is commodious, and I cannot conceive how anything could be better."



From  
A Customer

### SOME APPEALING FEATURES:

Lubrication is automatic, being started or stopped as the spark is switched on or off; governor acts on the mixture and times spark automatically; valves removable and replaceable easier and quicker than on any other gasoline car. The spark plugs won't short circuit and are connected to cables by chains, instead of the usual ever-snapping wires. Throttle on steering wheel permits of speeds from 6 to 40 miles per hour on high-speed gear—this feature alone places our car far in advance of others, and makes the motor as flexible and easily controlled as a steam motor.

Write or visit any branch office for convincing demonstration on the road.

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WHAT THEY  
SAY ABOUT

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PEERLESS AND CLEVELAND  
MOTOR CARS.

STORAGE AND REPAIRING.

318-318 FOURTH AVENUE SOUTH.

MINNEAPOLIS.

BOTH PHONES.

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Very truly yours,

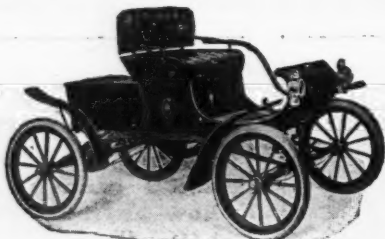
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**CLEVELAND AUTOMOBILE COMPANY,** 16-20 LAKE STREET, CLEVELAND, O., U. S. A.

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to run  
and  
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Nothing to  
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PRICE \$650

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Did you ever realize that one automobile out of every three used throughout the world is an

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"The Best Thing on Wheels"

and the demand for the standard runabout is so great that even with the rapid growth of the Automobile industry we shall more than maintain our position.

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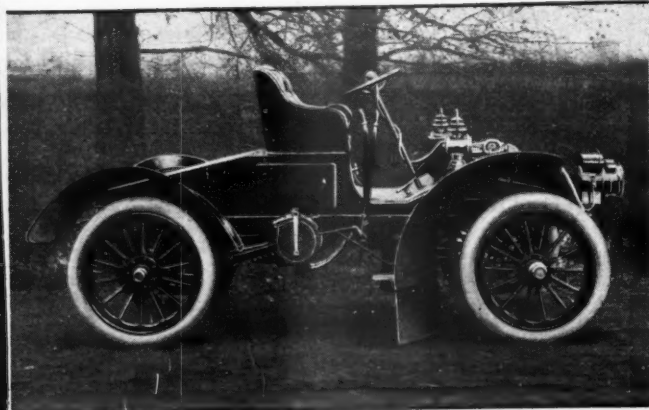
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ASK  
THE MAN  
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## No Car as Good as a Packard Except Another Packard

"I would like some of the special oil for lubricating my carriage, and you may send me a 5-gallon can of it if convenient for you to do so.

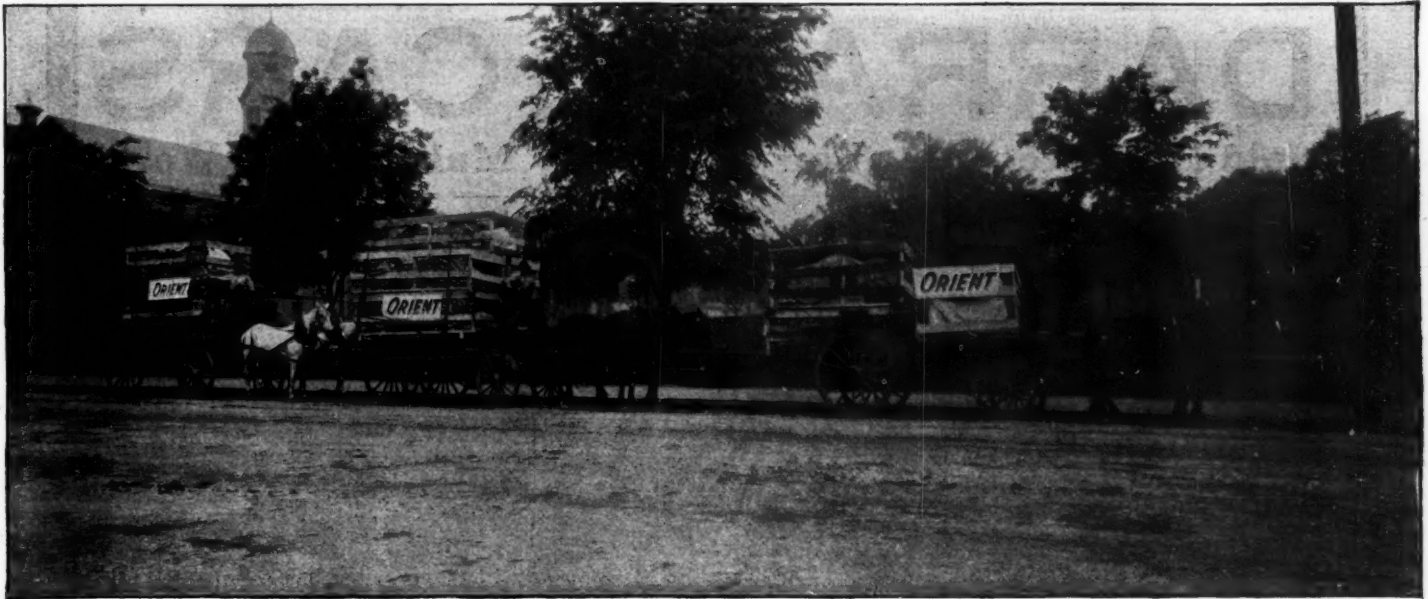
I have my C carriage in shape for this season's work, and don't know of any carriage on the market I would prefer to it, unless it was one of your F cars."

### PACKARD MOTOR CAR CO.

Licensed manufacturers under Selden patents  
**WARREN, OHIO**

Write for Name of nearest Agent





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## The Lowest Priced Automobile in the World THEY SELL LIKE BICYCLES

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In Goodrich Clincher Automobile Tires  
we guarantee the first, promise a large amount  
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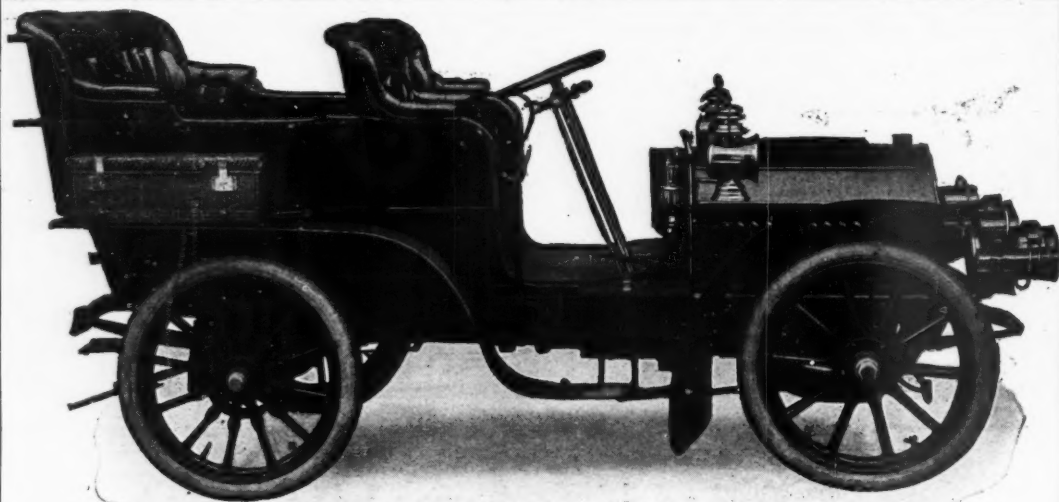
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Hold More Records than any Other Make in the World

SEE  
OUR NEW  
24  
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LATEST  
IMPORTATION



24 H. P. Four Cylinder Touring Car

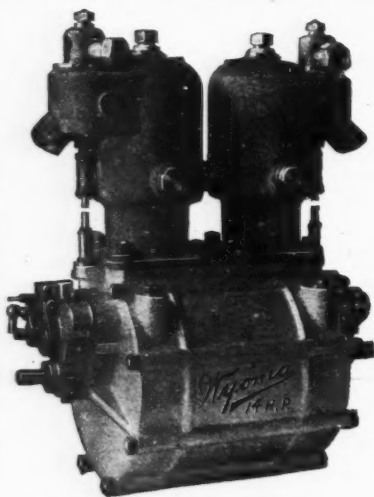
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Flexible, Frame  
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Noiseless  
Starts from Seat  
Luxuriously  
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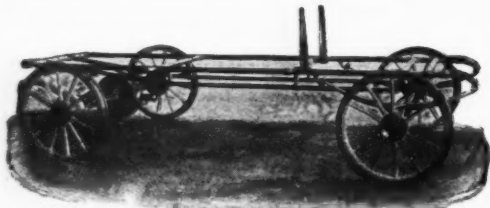
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WYOMA GASOLINE MOTOR.  
Single Cylinder, 8 H. P., 135 pounds.  
Double Cylinder, 14 H. P., 285 pounds.



TUBULAR RUNNING GEAR FOR TONNEAUS.  
80-inch Wheel Base. 54-inch Tread.

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TENTH AND EXETER STREETS  
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MANUFACTURERS OF

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Our Motors are of French Type, Water Cooled, and Equal  
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The Differential Gear has Manganese Bronze Bevel Gear.  
Fitted for either 1 1/4, 1 1/2 or 1 3/4 inch axles. Is made for Direct  
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We make a Tubular Running Gear for  
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extra heavy. The Differential on this  
is fitted for either Sprocket or Bevel  
Gear.



WYOMA DIFFERENTIAL  
SPUR GEAR.  
8 pitch — 60 Teeth.

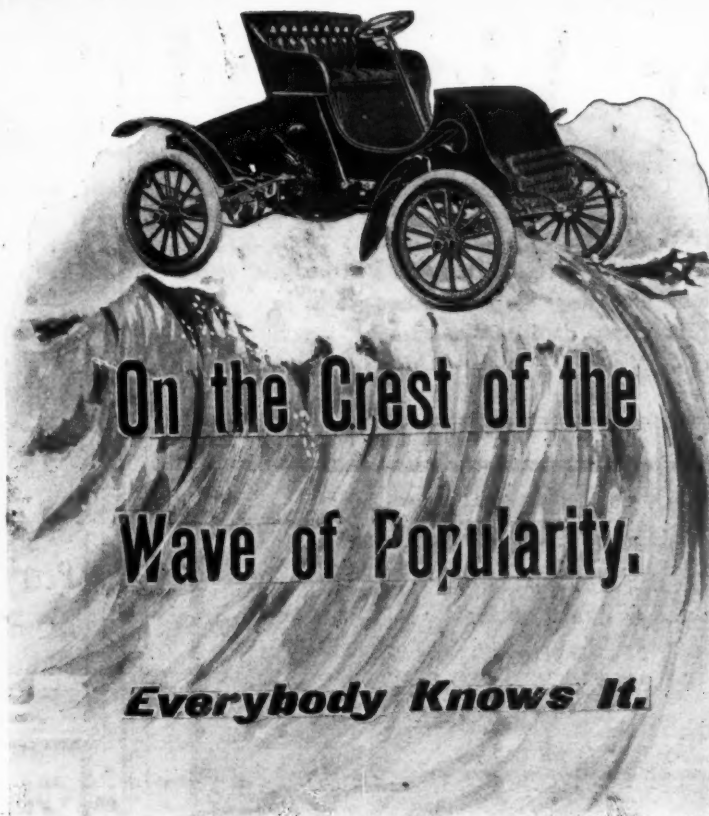


WYOMA TRANSMISSION GEAR.  
3 Speeds forward and 1 Reverse.



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Per Hour on a Country Road or on a Prepared Track,

## The PEERLESS

can be easily guided. The quickness and accuracy with which the wheels respond to the movement of the steering wheel will give the Peerless Racer a great advantage in the race for the Gordon-Bennett Cup, for the steering gear, as well as the vertical motors, bevel gear transmission, etc., are alike in the racer and the touring car.

The direction of the front wheels is regulated through a steel rod connecting at a knuckle joint, giving direct and instantaneous action. The construction of the steering gear is such as will not allow obstructions or depressions in the roadway to change the course of the car.

It is possible to round corners safely at almost full speed, as the steering arms connected to the lower part of the steering knuckles make the inner wheel describe a smaller circle than the outer one, thus preventing the car from skidding.

16 H. P., 2 cylinder touring cars ready for delivery on short notice.

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### THE PEERLESS MOTOR CAR COMP'Y

Factory & General Offices: Cleveland, Ohio.

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We manufacture in our own shops Automobile Bodies, Running Gears, Metal and Wood Hoods, Fenders, Air, Gasoline and Water Tanks, and we sell at factory prices Automobile Parts of every description. We will send you ready to be assembled all the parts of any machine, either of your own design or ours.

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Speedy and Beautiful in Finish.

Our Model A has 8 h. p. De Dion Motor with sliding transmission, three speeds and reverse and lists at \$1,250.

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304 N. BROAD ST., - PHILADELPHIA.

### The Most Popular Coil on the Market.

The name

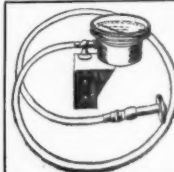
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Speaks for itself. (Short, but oh my!)



Write for Catalogue to the

**Dow Portable Electric Co.**  
BRAintree, MASS., U. S. A.



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Indicates constantly the exact rate of speed  
MADE FOR ALL TYPES OF AUTOMOBILES  
Guaranteed Accurate  
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*Simplicity Reliability  
Convenience*



The success of our patent air cooling system has been thoroughly demonstrated in years of use. Many details improved in 1908 car. Catalogue on application.

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NO EXPERT CHAUFFEUR NEEDED.

**Can be run any day in the year  
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**Descriptive Catalogue on Application**

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**FACTORY AND GENERAL OFFICES: SOUTH BEND, INDIANA.**  
First-Class Agents Desired in Territory not already covered.

# G & J

again scores with the

# World's Record

of

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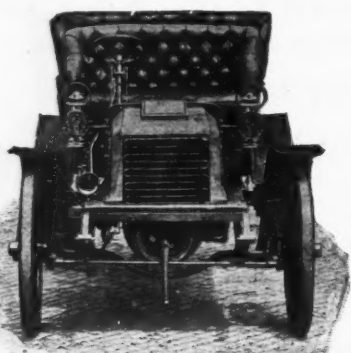
Made by Barney Oldfield, at the empire City Track,  
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**G & J Tires are fast, reliable and easy to repair.  
They are the choice of the well-posted man.**

## G & J Tire Company,

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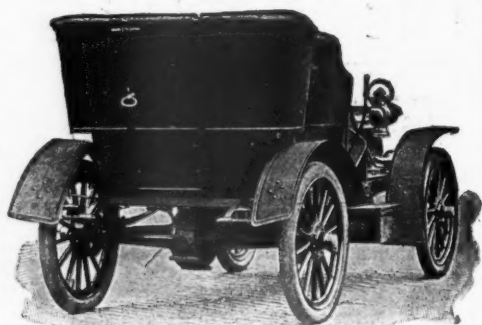
## The Premier

appeals to posted buyers who are looking for good value, and a high class touring car.

**\$2,500.00**

**Premier Motor Mfg. Co.**

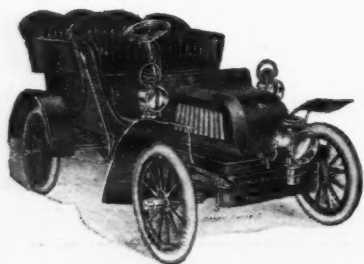
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AMERICA'S ONLY  
LIGHT ROADSTER AUTOMOBILE

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PRICE  
**\$1250**



PRICE  
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**ONE-HALF THE USUAL WEIGHT.**

Built like the high grade bicycle.  
Designed and constructed on scientific principles.  
Material and workmanship best money can buy.

**LIGHT, STRONG, SIMPLE, SAFE, SPEEDY.**

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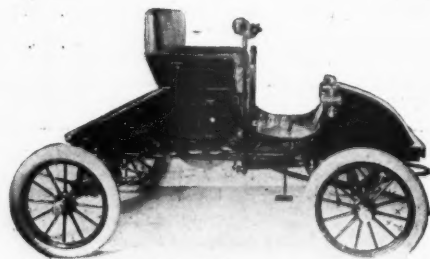
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## The MONARCH CAR

**\$750.00**

**\$750.00**

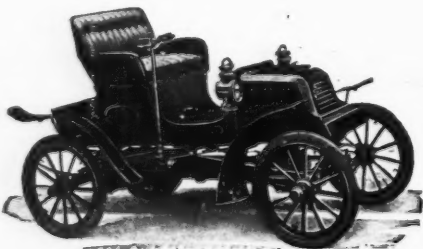
**IMMEDIATE DELIVERY**



5 H. P. Simple construction, easily operated.  
Large compartment under hood for luggage.  
Call and inspect at any time.

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MODEL D.

## CRESTMOBILE

FOR TWO  
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**\$750**

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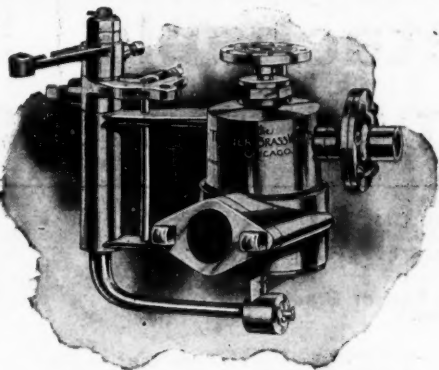
**\$850**

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**AIR COOLED :: CHAINLESS**

**CREST MANUFACTURING COMPANY,** 196 Broadway, Cambridge, Mass.





A sample of the New Turner Carburetor will be sent to properly rated manufacturers without deposit. Otherwise cash with order.

## POSITIVE FUEL FEEDER.

### The New Turner Carburetor

feeds the same amount of gasoline at each suction stroke regardless of the speed of the motor unless purposely throttled. Only one adjustment (the setting of the gasoline needle) is required to obtain a perfect mixture of air and gasoline under all conditions. Other carburetors require two adjustments.

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One New Turner Carburetor will handle any Double Opposed Cylinder Car of Haynes-Apperson type and cause both cylinders to work in absolute uniformity. Order your new car with a single New Turner Carburetor.

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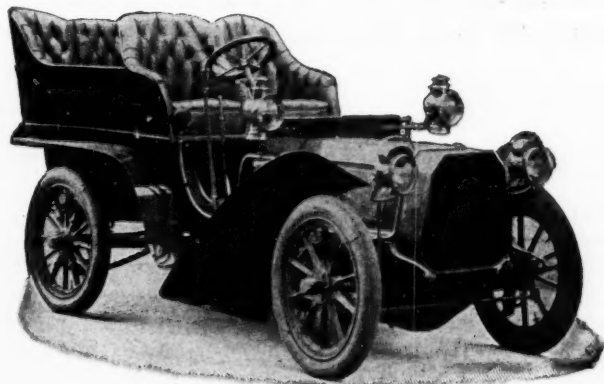
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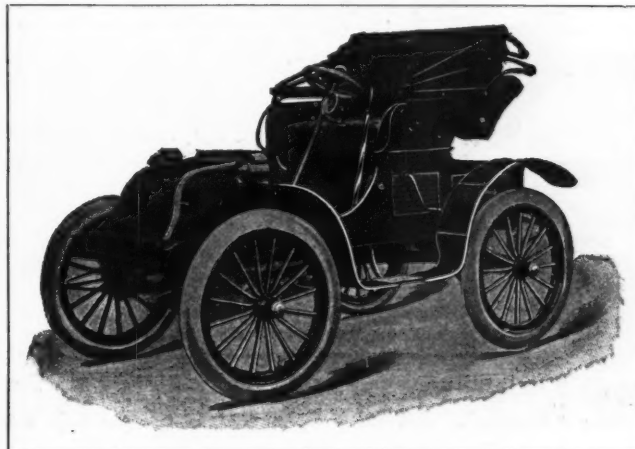
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**LOOK at the Haynes-Apperson Carriage**

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## New Steering Mechanism

Which is one of the New Features of this well liked Car.



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DO NOT SEPARATE  
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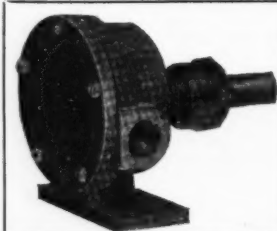
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Chicago, Marquette Bldg. St. Louis, 3357 Olive St.  
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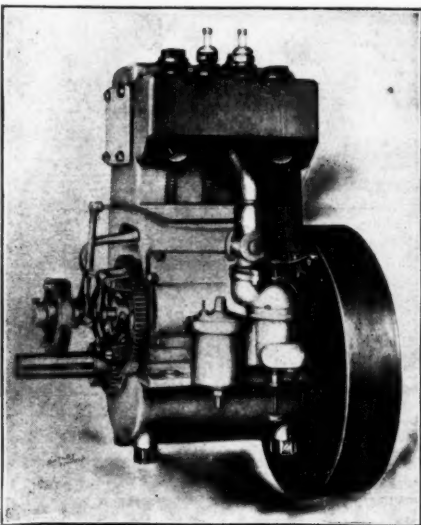
"Hail to the Chief, who in triumph  
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## MOTORS



This one 8 H. P.  
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Maximum Speed  
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**POWER** Enough and some to spare  
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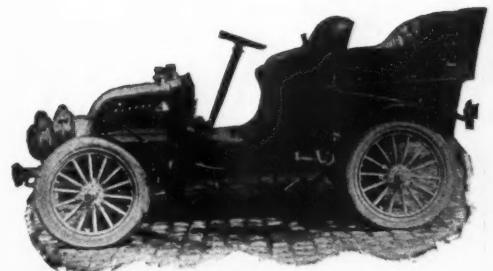
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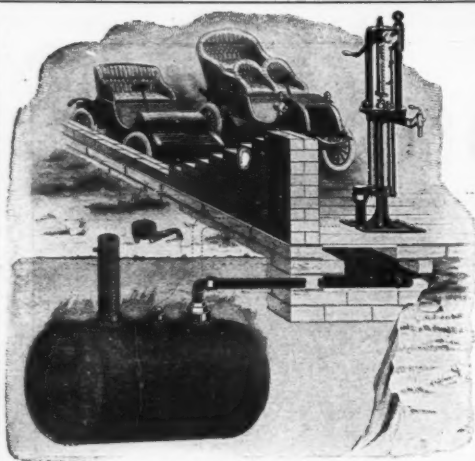
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Baltimore Agency, A. G. Spalding Bros., 25 West Baltimore Street.

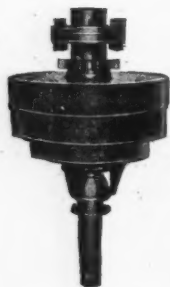
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Works: BEVERLY, MASS.

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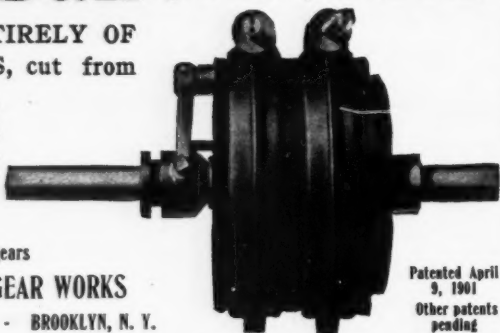
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No internal or bevel gears

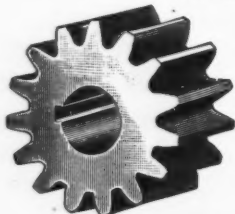
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If you want perfect Gears send them to  
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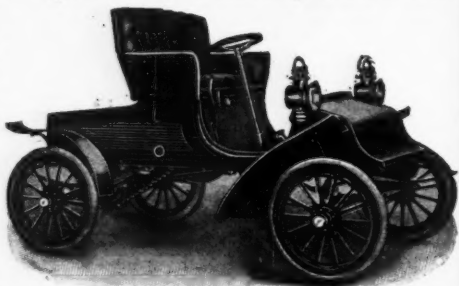
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Every part absolutely the  
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An aggressive dealer can  
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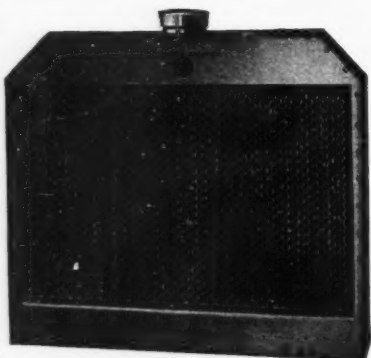
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Write to-day for proposition.

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We also make Disc Radiators  
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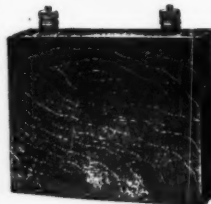
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For Automobile Use



This device is indispensable in jump spark  
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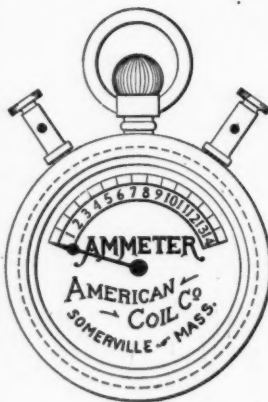
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**\$150.00**

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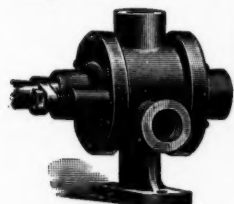
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Will give perfect con-  
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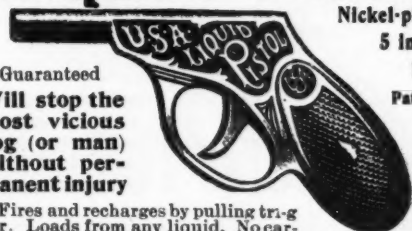
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Guaranteed  
Will stop the  
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without per-  
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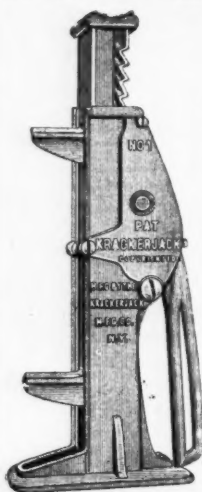
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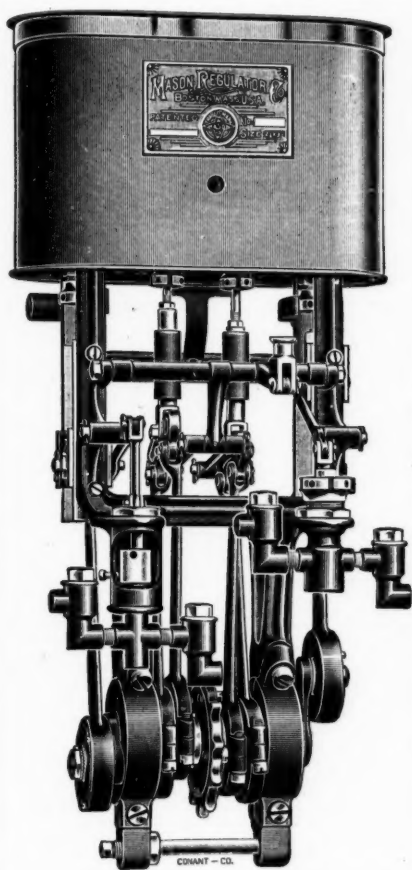
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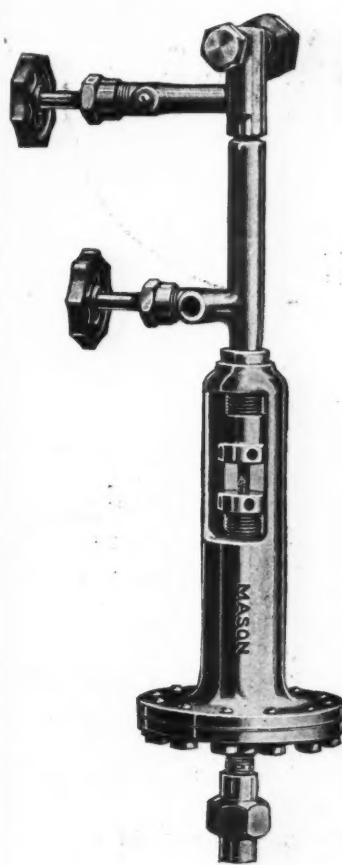


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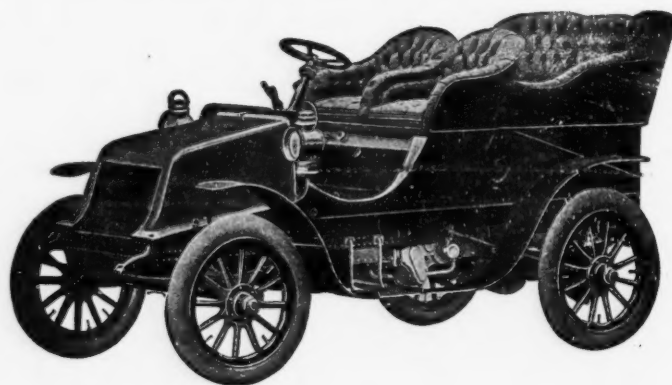
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